No. 16-1275

In The Supreme Court of the United States

VIRGINIA URANIUM, INC., *et al.*,

Petitioners,

v.

JOHN WARREN, *et al.*,

Respondents.

On Writ Of Certiorari To The United States Court Of Appeals For The Fourth Circuit

JOINT APPENDIX

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Petition For Certiorari Filed April 21, 2017
Certiorari Granted May 21, 2018

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The following opinions and orders have been omitted in printing this Joint Appendix because they appear on the following pages in the appendix to the Petition for a Writ of Certiorari:

Opinion of the United States Court of Appeals for the Fourth Circuit, *Virginia Uranium, Inc. v. Warren*, No. 16-1005 (Feb. 17, 2017) 1a

Opinion of the United States District Court for the Western District of Virginia, *Virginia Uranium, Inc. v. McAuliffe*, No. 4:15-cv-31 (Dec. 2, 2015) 53a

U.S. District Court
Western District of Virginia (Danville)
CIVIL DOCKET FOR
CASE #: 4:15–cv–00031–JLK–RSB

Virginia Uranium, Inc. et al v. McAuliffe et al
Assigned to: Judge Jackson L. Kiser
Referred to: Magistrate Judge Robert S. Ballou
Case in other court: 16–01005
Cause: 28:1331 Fed. Question

Date Filed: 08/05/2015
Date Terminated: 12/02/2015
Jury Demand: None
Nature of Suit: 950 Constitutional – State Statute
Jurisdiction: Federal Question

Date Filed	#	Docket Text
08/05/2015	1	COMPLAINT FOR DECLARATORY AND INJUNCTIVE RELIEF against Melanie D. Davenport, Michael Dowd, Maurice Jones, Bradley C. Lambert, Terry McAuliffe, David K. Paylor, James P. Skorupa, Conrad Spangler, Molly J. Ward, Robert J. Weld, Justin Williams (Filing & Administrative fee $400.00; receipt number 0423–2282328 paid via pay.gov) filed by Coles Hill, LLC, Virginia Energy Resources, Inc., Virginia Uranium, Inc., Bowen Minerals, LLC. 100 Day Notice due by 11/13/2015; 120 Day Service due by 12/3/2015. (Attachments: # 1 Exhibit 1, # 2 Exhibit 2, # 3 Exhibit 3, # 4 Exhibit 4,

		# 5 Exhibit 5, # 6 Exhibit 6, # 7 Civil Cover Sheet)(ham)
08/05/2015	2	Positive Corporate Disclosure Statement by Virginia Uranium, Inc. identifying Corporate Parent Virginia Energy Resources, Inc. and Virginia Energy Resources, Inc. identifying Other Affiliate Sprott Resource Corp. & Other Affiliate Energy Fuels, Inc. Negative Corporate Disclosure Statement by Coles Hill, LLC and Bowen Minerals, LLC. (ham)
08/05/2015	3	Proposed Summons by Coles Hill, LLC, Virginia Energy Resources, Inc., Virginia Uranium, Inc., Bowen Minerals, LLC as to Terry McAuliffe.(Weitzner, Michael)
08/05/2015	4	Proposed Summons by Coles Hill, LLC, Virginia Energy Resources, Inc., Virginia Uranium, Inc., Bowen Minerals, LLC as to Maurice Jones.(Weitzner, Michael)
08/05/2015	5	Proposed Summons by Coles Hill, LLC, Virginia Energy Resources, Inc., Virginia Uranium, Inc., Bowen Minerals, LLC as to Conrad Spangler.(Weitzner, Michael)
08/05/2015	6	Proposed Summons by Coles Hill, LLC, Virginia Energy Resources, Inc., Virginia Uranium, Inc., Bowen Minerals, LLC as to Bradley C. Lambert.(Weitzner, Michael)

08/05/2015	7	Proposed Summons by Coles Hill, LLC, Virginia Energy Resources, Inc., Virginia Uranium, Inc., Bowen Minerals, LLC as to James P. Skorupa.(Weitzner, Michael)
08/05/2015	8	Proposed Summons by Coles Hill, LLC, Virginia Energy Resources, Inc., Virginia Uranium, Inc., Bowen Minerals, LLC as to Molly J. Ward.(Weitzner, Michael)
08/05/2015	9	Proposed Summons by Coles Hill, LLC, Virginia Energy Resources, Inc., Virginia Uranium, Inc., Bowen Minerals, LLC as to David K. Paylor.(Weitzner, Michael)
08/05/2015	10	Proposed Summons by Coles Hill, LLC, Virginia Energy Resources, Inc., Virginia Uranium, Inc., Bowen Minerals, LLC as to Robert J. Weld.(Weitzner, Michael)
08/05/2015	11	Proposed Summons by Coles Hill, LLC, Virginia Energy Resources, Inc., Virginia Uranium, Inc., Bowen Minerals, LLC as to Michael Dowd.(Weitzner, Michael)
08/05/2015	12	Proposed Summons by Coles Hill, LLC, Virginia Energy Resources, Inc., Virginia Uranium, Inc., Bowen Minerals, LLC as to Melanie D. Davenport.(Weitzner, Michael)
08/05/2015	13	Proposed Summons by Coles Hill, LLC, Virginia Energy Resources, Inc., Virginia Uranium, Inc., Bowen

Minerals, LLC as to Justin Williams.(Weitzner, Michael)

08/05/2015 14 Summons Issued as to Melanie D. Davenport, Michael Dowd, Maurice Jones, Bradley C. Lambert, Terry McAuliffe, David K. Paylor, James P. Skorupa, Conrad Spangler, Molly J. Ward, Robert J. Weld, Justin Williams. (Original Summons mailed to counsel for service).(ham)

08/05/2015 15 MOTION for *Charles J. Cooper* to Appear Pro Hac Vice. by Bowen Minerals, LLC, Coles Hill, LLC, Virginia Energy Resources, Inc., Virginia Uranium, Inc.. (Attachments: # 1 Certificate of Good Standing, # 2 Text of Proposed Order)(Weitzner, Michael)

08/05/2015 16 MOTION for *Michael W. Kirk* to Appear Pro Hac Vice. by Bowen Minerals, LLC, Coles Hill, LLC, Virginia Energy Resources, Inc., Virginia Uranium, Inc.. (Attachments: # 1 Certificate of Good Standing, # 2 Text of Proposed Order)(Weitzner, Michael)

08/05/2015 17 MOTION for *John D. Ohlendorf* to Appear Pro Hac Vice. by Bowen Minerals, LLC, Coles Hill, LLC, Virginia Energy Resources, Inc., Virginia Uranium, Inc.. (Attachments: # 1 Certificate of Good Standing, # 2

		Text of Proposed Order)(Weitzner, Michael)
08/06/2015	18	ORDER granting 15 MOTION for *Charles J. Cooper* to Appear Pro Hac Vice. Attorney Charles J. Cooper for Bowen Minerals, LLC, Coles Hill, LLC, Virginia Energy Resources, Inc. & Virginia Uranium, Inc. added. Signed by Judge Jackson L. Kiser on 8/6/15. (ham)
08/06/2015	19	ORDER granting 16 MOTION for *Michael W. Kirk* to Appear Pro Hac Vice. Attorney Michael W. Kirk for Bowen Minerals, LLC, Coles Hill, LLC, Virginia Energy Resources, Inc. & Virginia Uranium, Inc. added. Signed by Judge Jackson L. Kiser on 8/6/15. (ham)
08/06/2015	20	ORDER granting 17 MOTION for *John D. Ohlendorf* to Appear Pro Hac Vice. Attorney John D. Ohlendorf for Bowen Minerals, LLC, Coles Hill, LLC, Virginia Energy Resources, Inc. & Virginia Uranium, Inc. added. Signed by Judge Jackson L. Kiser on 8/6/15. (ham)
08/10/2015	21	SUMMONS Returned Executed by Coles Hill, LLC, Virginia Energy Resources, Inc., Virginia Uranium, Inc., Bowen Minerals, LLC. Terry McAuliffe served on 8/7/2015, answer due 8/28/2015.(Weitzner, Michael)

08/10/2015	22	SUMMONS Returned Executed by Coles Hill, LLC, Virginia Energy Resources, Inc., Virginia Uranium, Inc., Bowen Minerals, LLC. Maurice Jones served on 8/7/2015, answer due 8/28/2015.(Weitzner, Michael)
08/10/2015	23	SUMMONS Returned Executed by Coles Hill, LLC, Virginia Energy Resources, Inc., Virginia Uranium, Inc., Bowen Minerals, LLC. Conrad Spangler served on 8/7/2015, answer due 8/28/2015.(Weitzner, Michael)
08/10/2015	24	SUMMONS Returned Executed by Coles Hill, LLC, Virginia Energy Resources, Inc., Virginia Uranium, Inc., Bowen Minerals, LLC. Molly J. Ward served on 8/7/2015, answer due 8/28/2015.(Weitzner, Michael)
08/10/2015	25	SUMMONS Returned Executed by Coles Hill, LLC, Virginia Energy Resources, Inc., Virginia Uranium, Inc., Bowen Minerals, LLC. David K. Paylor served on 8/7/2015, answer due 8/28/2015.(Weitzner, Michael)
08/10/2015	26	SUMMONS Returned Executed by Coles Hill, LLC, Virginia Energy Resources, Inc., Virginia Uranium, Inc., Bowen Minerals, LLC. Michael Dowd served on 8/7/2015, answer due 8/28/2015.(Weitzner, Michael)
08/10/2015	27	SUMMONS Returned Executed by Coles Hill, LLC, Virginia Energy Resources, Inc., Virginia Uranium,

		Inc., Bowen Minerals, LLC. Melanie D. Davenport served on 8/7/2015, answer due 8/28/2015.(Weitzner, Michael)
08/10/2015	28	SUMMONS Returned Executed by Coles Hill, LLC, Virginia Energy Resources, Inc., Virginia Uranium, Inc., Bowen Minerals, LLC. Justin Williams served on 8/7/2015, answer due 8/28/2015.(Weitzner, Michael)
08/10/2015	29	SUMMONS Returned Executed by Coles Hill, LLC, Virginia Energy Resources, Inc., Virginia Uranium, Inc., Bowen Minerals, LLC. Bradley C. Lambert served on 8/10/2015, answer due 8/31/2015.(Weitzner, Michael)
08/11/2015	30	SUMMONS Returned Executed by Coles Hill, LLC, Virginia Energy Resources, Inc., Virginia Uranium, Inc., Bowen Minerals, LLC. James P. Skorupa served on 8/10/2015, answer due 8/31/2015.(Weitzner, Michael)
08/11/2015	31	SUMMONS Returned Executed by Coles Hill, LLC, Virginia Energy Resources, Inc., Virginia Uranium, Inc., Bowen Minerals, LLC. Robert J. Weld served on 8/6/2015, answer due 8/27/2015.(Weitzner, Michael)
08/25/2015	32	MOTION TO DISMISS FOR FAILURE TO STATE A CLAIM, MOTION to Dismiss for Lack of Jurisdiction by Melanie D. Davenport, Michael Dowd, Maurice Jones,

Bradley C. Lambert, Terry McAuliffe, David K. Paylor, James P. Skorupa, Conrad Spangler, Molly J. Ward, Robert J. Weld, Justin Williams. (Attachments: # 1 Declaration in Support Motion to Dismiss, # 2 Exhibit A – NRC Memorandum, # 3 Exhibit B – NRC Fact Sheet, # 4 Exhibit C – EPA Fact Sheet, # 5 Exhibit D – Report of Secretary of the Commonwealth, # 6 Text of Proposed Order Granting Motion to Dismiss)(Pitchford, Jonathan)

08/25/2015 33 Magistrate Consent Notice to Parties. (ham)

08/25/2015 34 PRETRIAL ORDER, Order Referring Case to Magistrate Judge Robert S. Ballou. Signed by Judge Jackson L. Kiser on 8/25/15. (ham)

08/30/2015 35 NOTICE of Hearing: **(CR)** Bench Trial set for 12/14/2015 at 09:30 AM in Danville before Judge Jackson L. Kiser. **Counsel must contact the Clerk's Office no later than five (5) business days before the scheduled trial date for your technology needs.** (ham)

08/30/2015 36 NOTICE of Requested Hearing by Attorney for Melanie D. Davenport, Michael Dowd, Maurice Jones, Bradley C. Lambert, Terry McAuliffe, David K. Paylor, James P. Skorupa, Conrad Spangler, Molly J. Ward,

		Robert J. Weld, Justin Williams re 32 MOTION TO DISMISS FOR FAILURE TO STATE A CLAIM MOTION to Dismiss for Lack of Jurisdiction Motion to Dismiss hearing date November 6, 2015, at 10:00 a.m., at U.S. District Court, Danville, before Judge Kiser. Confirmation notice to be sent by the Clerk's Office. (Pitchford, Jonathan)
08/30/2015	37	NOTICE of Hearing on Motion 32 MOTION TO DISMISS FOR FAILURE TO STATE A CLAIM MOTION to Dismiss for Lack of Jurisdiction: **(CR)** Motion Hearing set for 11/6/2015 at 10:00 AM in Danville before Judge Jackson L. Kiser. (ham)
09/04/2015	38	NOTICE of Appearance by William Choice Cleveland, IV on behalf of Roanoke River Basin Association, Dan River Basin Association (Cleveland, William)
09/04/2015	39	NOTICE of Appearance by Caleb Adam Jaffee on behalf of Dan River Basin Association, Roanoke River Basin Association (Jaffee, Caleb)
09/04/2015	40	First MOTION to Intervene by Dan River Basin Association, Roanoke River Basin Association. (Jaffee, Caleb)
09/04/2015	41	Brief / Memorandum in Support re 40 First MOTION to Intervene . filed by Dan River Basin Association, Roanoke

River Basin Association. (Jaffee, Caleb)

09/04/2015 42 **MOTION TO DISMISS FOR FAILURE TO STATE A CLAIM** by Dan River Basin Association, Roanoke River Basin Association. (Jaffee, Caleb)

09/04/2015 43 Brief / Memorandum in Support re 42 **MOTION TO DISMISS FOR FAILURE TO STATE A CLAIM** . filed by Dan River Basin Association, Roanoke River Basin Association. (Attachments: # 1 Exhibit Danville Register & Bee, March 28, 2011)(Jaffee, Caleb)

09/04/2015 44 Negative Corporate Disclosure Statement by Roanoke River Basin Association (Jaffee, Caleb)

09/04/2015 45 Negative Corporate Disclosure Statement by Dan River Basin Association (Jaffee, Caleb)

09/11/2015 46 Cross MOTION for Summary Judgment by Bowen Minerals, LLC, Coles Hill, LLC, Virginia Energy Resources, Inc., Virginia Uranium, Inc.. (Attachments: # 1 Text of Proposed Order)(Cooper, Charles)

09/11/2015 47 Brief / Memorandum in Support re 46 Cross MOTION for Summary Judgment, 32 MOTION TO DISMISS FOR FAILURE TO STATE A CLAIM MOTION to Dismiss for Lack of Jurisdiction *(Response in Opposition)*.

		filed by Bowen Minerals, LLC, Coles Hill, LLC, Virginia Energy Resources, Inc., Virginia Uranium, Inc.. (Attachments: # 1 Appendix)(Cooper, Charles)
09/11/2015	48	Declaration re 46 Cross MOTION for Summary Judgment by Bowen Minerals, LLC, Coles Hill, LLC, Virginia Energy Resources, Inc., Virginia Uranium, Inc. (Attachments: # 1 Exhibit 1 & 2, # 2 Exhibit 3 (Part 1 of 6), # 3 Exhibit 3 (Part 2 of 6), # 4 Exhibit 3 (Part 3 of 6), # 5 Exhibit 3 (Part 4 of 6), # 6 Exhibit 3 (Part 5 of 6), # 7 Exhibit 3 (Part 6 of 6), # 8 Exhibit 4 & 5, # 9 Exhibit 6, # 10 Exhibit 7 (Part 1 of 3), # 11 Exhibit 7 (Part 2 of 3), # 12 Exhibit 7 (Part 3 of 3), # 13 Exhibit 8 – 14, # 14 Exhibit 15 (Part 1 of 3), # 15 Exhibit 15 (Part 2 of 3), # 16 Exhibit 15 (Part 3 of 3), # 17 Exhibit 16, # 18 Exhibit 17, # 19 Exhibit 18 – 21, # 20 Exhibit 22 – 27, # 21 Exhibit 28 – 33, # 22 Exhibit 34 – 41, # 23 Exhibit 42 – 48, # 24 Exhibit 49 – 54, # 25 Exhibit 55 – 60, # 26 Exhibit 61 – 67, # 27 Exhibit 68 – 75, # 28 Exhibit 76 – 82, # 29 Exhibit 83 – 89, # 30 Exhibit 90 – 94)(Cooper, Charles)
09/15/2015	49	NOTICE of Requested Hearing by Attorney for Dan River Basin Association, Roanoke River Basin Association re 40 First MOTION to

Intervene Oral Argument on Motion to Intervene hearing date 10/09/2015, at 10:00am, at U.S. District Court, Danville, before Judge Kiser. Confirmation notice to be sent by the Clerk's Office. (Cleveland, William)

09/15/2015 50 NOTICE of Requested Hearing by Attorney for Bowen Minerals, LLC, Coles Hill, LLC, Virginia Energy Resources, Inc., Virginia Uranium, Inc. re 46 Cross MOTION for Summary Judgment Requested hearing date Friday, November 6, 2015, at 10:00 a.m., at U.S. District Court, Danville Courthouse, 700 Main Street, Danville, Virginia 24541, before Judge Kiser. Confirmation notice to be sent by the Clerk's Office. (Cooper, Charles)

09/17/2015 51 NOTICE of Hearing on Motion 40 First MOTION to Intervene: **(CR)** Motion Hearing set for 10/9/2015 at 10:00 AM in Danville before Judge Jackson L. Kiser. (ham)

09/17/2015 52 NOTICE of Hearing on Motion 46 Cross MOTION for Summary Judgment: **(CR)** Motion Hearing set for 11/6/2015 at 10:00 AM in Danville before Judge Jackson L. Kiser. (ham)

09/17/2015 53 NOTICE of Requested Hearing by Attorney for Dan River Basin Association, Roanoke River Basin Association re 42 MOTION TO

DISMISS FOR FAILURE TO STATE A CLAIM Motion to Dismiss hearing date November 6, 2015, at 10am, at U.S. District Court, Danville, before Judge Kiser. Confirmation notice to be sent by the Clerk's Office. (Cleveland, William)

09/17/2015 54 NOTICE of Hearing on Motion 42 MOTION TO DISMISS FOR FAILURE TO STATE A CLAIM: (CR) Motion Hearing set for 11/6/2015 at 10:00 AM in Danville before Judge Jackson L. Kiser. (ham)

09/18/2015 55 RESPONSE to Motion re 40 First MOTION to Intervene . filed by Melanie D. Davenport, Michael Dowd, Maurice Jones, Bradley C. Lambert, Terry McAuliffe, David K. Paylor, James P. Skorupa, Conrad Spangler, Molly J. Ward, Robert J. Weld, Justin Williams. (Pitchford, Jonathan)

09/18/2015 56 REPLY to Response to Motion re 32 MOTION TO DISMISS FOR FAILURE TO STATE A CLAIM, MOTION to Dismiss for Lack of Jurisdiction and RESPONSE in Opposition re 46 Cross MOTION for Summary Judgment filed by Melanie D. Davenport, Michael Dowd, Maurice Jones, Bradley C. Lambert, Terry McAuliffe, David K. Paylor, James P. Skorupa, Conrad Spangler, Molly J. Ward, Robert J. Weld, Justin Williams. (Pitchford, Jonathan) Modified on

9/18/2015 – corrected docket text (ham).

09/21/2015 57 RESPONSE in Opposition re 40 First MOTION to Intervene . filed by Bowen Minerals, LLC, Coles Hill, LLC, Virginia Energy Resources, Inc., Virginia Uranium, Inc.. (Cooper, Charles)

09/28/2015 58 REPLY to Response to Motion re 46 Cross MOTION for Summary Judgment . filed by Bowen Minerals, LLC, Coles Hill, LLC, Virginia Energy Resources, Inc., Virginia Uranium, Inc.. (Cooper, Charles)

10/01/2015 59 REPLY to Response to Motion re 40 First MOTION to Intervene . filed by Dan River Basin Association, Roanoke River Basin Association. (Jaffee, Caleb)

10/09/2015 60 Minute Entry for proceedings held before Judge Jackson L. Kiser: Motion Hearing held on 10/9/2015 re: 40 Motion for Leave to Intervene Pursuant to Fed. R. Civ. P. 24 on Behalf of the Roanoke River Basin Association and the Dan River Basin Association. Order forthcoming. (Court Reporter: Judy Webb) (mlh)

10/09/2015 61 TRANSCRIPT REQUEST (14 calendar days Service) by Melanie D. Davenport, Michael Dowd, Maurice Jones, Bradley C. Lambert, Terry McAuliffe, David K. Paylor, James P.

Skorupa, Conrad Spangler, Molly J. Ward, Robert J. Weld, Justin Williams for Hearing on Motion to Intervene held on **10/09/2015** before Judge Kiser, Judy Webb, OCR. *Transcript Due Deadline will be set when Financial Arrangements are made.* (Pitchford, Jonathan) (Main Document 61 replaced on 10/9/2015 to attach pfd formatted request) (rkm). Modified on 10/9/2015 to include name of Court Reporter (rkm).

10/09/2015 62 **Financial arrangements made** (14 calendar days Service) re 61 Transcript Request,, **Transcript due by 10/23/2015.** (jw) (Entered: 10/13/2015)

10/19/2015 63 TRANSCRIPT of Proceedings: Motion Hearing held on **10/9/15** before Judge Jackson L. Kiser. Court Reporter/Transcriber Judy K. Webb, Telephone number 540–857–5100 X 5333/judyw@vawd.uscourts.gov. **NOTICE RE REDACTION OF TRANSCRIPTS:The parties have seven (7) calendar days to file with the Court a Notice of Intent to Request Redaction of this transcript. If no such Notice is filed, the transcript will be made remotely electronically available to the public without redaction after 90 calendar days. The policy is located on our website at**

www.vawd.uscourts.gov Transcript may be viewed at the court public terminal or purchased through the Court Reporter/Transcriber before the deadline for Release of Transcript Restriction. After that date it may be obtained through PACER. Redaction Request due 11/12/2015. Redacted Transcript Deadline set for 11/23/2015. Release of Transcript Restriction set for 1/22/2016. (jw)

10/19/2015 64 MEMORANDUM OPINION. Signed by Judge Jackson L. Kiser on 10/19/2015. (mlh)

10/19/2015 65 ORDER denying 40 Motion for Leave to Intervene Pursuant to Fed. R. Civ. P. 24 on Behalf of the Roanoke River Basin Association and the Dan River Basin Association; granting Movants leave to file amicus curiae briefs in further proceedings. Signed by Judge Jackson L. Kiser on 10/19/2015. (mlh)

10/19/2015 66 TRANSCRIPT REQUEST – COPY (Expedited–7 calendar days Service) by Bowen Minerals, LLC, Coles Hill, LLC, Virginia Energy Resources, Inc., Virginia Uranium, Inc. for Hearing on Motion to Intervene held on **10/9/2015** reported by Court Reporter Judy K. Webb before Judge Jackson L. Kiser. *Transcript Due Deadline will be set when Financial Arrangements are*

made. (Weitzner, Michael) Modified on 10/21/2015 as a copy request, original previously requested by another party at DE#61 (bkd).

10/20/2015 67 ORDER denying as moot 42 Motion to Dismiss for Failure to State a Claim. Signed by Judge Jackson L. Kiser on 10/20/15. (ham)

11/02/2015 69 Brief/Memorandum *Amicus Curiae.* filed by Dan River Basin Association, Roanoke River Basin Association. (Attachments: # 1 Exhibit Coles Op–Ed, # 2 Exhibit NAS Report chapters 7 and 8, # 3 Exhibit Coles London transcript, # 4 Exhibit Coles New York transcript)(Jaffee, Caleb)

11/03/2015 Notice of Correction: Changed viewing restriction of Document 68 Brief/Memorandum due to attorney attaching incorrect/deficient pdf (s/ signature was omitted; attorney preferred to refile pleading with s/ signature even though not required to do so); only viewable by court personnel. Document correctly filed at Document 69 Brief/Memorandum. (ham)

11/04/2015 70 MOTION for Leave to File *a Response to the Roanoke River Basin Association and Dan River Basin Association's Amicus Curiae Brief* by Bowen Minerals, LLC, Coles Hill, LLC, Virginia Energy Resources, Inc.,

Virginia Uranium, Inc.. (Attachments: # 1 Proposed Response to Amicus Brief)(Cooper, Charles)

11/05/2015 71 ORDER granting 70 Motion for Leave to File a Response to Roanoke River Basin Association and Dan River Basin Association's Amicus Curiae Brief. Signed by Judge Jackson L. Kiser on 11/5/15. (ham)

11/05/2015 72 Response to 69 Amicus Curiae Brief filed by Bowen Minerals, LLC, Coles Hill, LLC, Virginia Energy Resources, Inc., Virginia Uranium, Inc. (ham)

11/06/2015 73 Minute Entry for proceedings held before Judge Jackson L. Kiser: Motion Hearing held on 11/6/2015 re: 32 MOTION TO DISMISS FOR FAILURE TO STATE A CLAIM, MOTION to Dismiss for Lack of Jurisdiction filed by Conrad Spangler, David K. Paylor, Justin Williams, Terry McAuliffe, Melanie D. Davenport, Molly J. Ward, James P. Skorupa, Bradley C. Lambert, Robert J. Weld, Maurice Jones, Michael Dowd; 46 Cross MOTION for Summary Judgment filed by Virginia Energy Resources, Inc., Virginia Uranium, Inc., Coles Hill, LLC, Bowen Minerals, LLC. Order forthcoming. (Court Reporter: Janelle Mundy (sworn)) (mlh)

11/09/2015 74 TRANSCRIPT REQUEST (Ordinary–30 calendar days Service) by Melanie D. Davenport, Michael Dowd, Maurice Jones, Bradley C. Lambert, Terry McAuliffe, David K. Paylor, James P. Skorupa, Conrad Spangler, Molly J. Ward, Robert J. Weld, Justin Williams for Hearing on Motion to Dismiss held on **November 6, 2015** before Judge Kiser. *Transcript Due Deadline will be set when Financial Arrangements are made.* (Pitchford, Jonathan)

11/10/2015 75 TRANSCRIPT REQUEST – (COPY) by Bowen Minerals, LLC, Coles Hill, LLC, Virginia Energy Resources, Inc., Virginia Uranium, Inc. for Hearing on Motion to Dismiss and Cross–Motion for Summary Judgment held on **11/6/2015** reported by Court Reporter Janelle Mundy before Judge Jackson L. Kiser. *Transcript Due Deadline will be set when Financial Arrangements are made.* (Cooper, Charles) Corrected request to reflect copy instead of original. Modified on 11/12/2015 (bkd).

12/01/2015 77 TRANSCRIPT of Proceedings: Motion for Summary Judgment held on **November 6, 2015** before Judge Jackson L. Kiser. Court Reporter/Transcriber Janelle Mundy, Contract court reporter, Telephone number 540/342–2547. **NOTICE RE REDACTION OF TRANSCRIPTS:**The parties

have seven (7) calendar days to file with the Court a Notice of Intent to Request Redaction of this transcript. If no such Notice is filed, the transcript will be made remotely electronically available to the public without redaction after 90 calendar days. The policy is located on our website at www.vawd.uscourts.gov Transcript may be viewed at the court public terminal or purchased through the Court Reporter/Transcriber before the deadline for Release of Transcript Restriction. After that date it may be obtained through PACER. Redaction Request due 12/28/2015. Redacted Transcript Deadline set for 1/7/2016. Release of Transcript Restriction set for 3/3/2016. (bkd)

12/02/2015 78 MEMORANDUM OPINION. Signed by Judge Jackson L. Kiser on 12/2/2015. (mlh)

12/02/2015 79 ORDER granting 32 Motion to Dismiss for Failure to State a Claim; granting 32 Motion to Dismiss for Lack of Jurisdiction; denying 46 Cross Motion for Summary Judgment. Clerk is directed to strike this case from the active docket of this Court. Signed by Judge Jackson L. Kiser on 12/2/2015. (mlh)

12/31/2015	80	NOTICE OF APPEAL as to 78 Memorandum Opinion, 79 Order on Motion to Dismiss for Failure to State a Claim, Order on Motion to Dismiss/Lack of Jurisdiction, Order on Motion for Summary Judgment by Bowen Minerals, LLC, Coles Hill, LLC, Virginia Energy Resources, Inc. & Virginia Uranium, Inc. (Attachment: # 1 Exhibit A – Order of Final Judgment)(Cooper, Charles) Modified on 1/4/2016 – removed filing fee text due to being paid separately (ham).
12/31/2015	81	USCA Appeal Fees received: $505.00; receipt number 7–47678 re 80 Notice of Appeal filed by Virginia Energy Resources, Inc., Virginia Uranium, Inc., Coles Hill, LLC & Bowen Minerals, LLC. (ham) (Entered: 01/04/2016)
01/04/2016	82	Transmittal of Notice of Appeal to 4CCA re 80 Notice of Appeal. NOTE: The Docketing Statement and Transcript Order Form are available on the 4th Circuit Court of Appeals website at www.ca4.uscourts.gov. If CJA24 form(s) are applicable, you must submit a separate Auth–24 for each court reporter from whom you wish to order a transcript through the District Court's eVoucher system. (ham)

01/04/2016	83	Order Directing Appellant to Post Cost Bond, with proper surety, in penal amount of $500.00 within ten days. Signed by Judge Jackson L. Kiser on 1/4/16. (ham)
01/05/2016	84	NOTICE of Docketing Record on Appeal from USCA re 80 Notice of Appeal filed by Virginia Energy Resources, Inc., Virginia Uranium, Inc., Coles Hill, LLC & Bowen Minerals, LLC. USCA Case Number 16–1005; Case Manager M. Radday. (ham)
01/05/2016	85	USCA APPEAL COSTS BOND received in the amount of $500.00; receipt number 4–1842 re 80 Notice of Appeal. (Attachment: # 1 Receipt 4–1842)(ham)
02/17/2017	86	USCA Memorandum Opinion from 4th Circuit re 80 Notice of Appeal; affirming; decided on 2/17/17. (ham)
02/17/2017	87	USCA JUDGMENT as to 80 Notice of Appeal filed by Virginia Energy Resources, Inc., Virginia Uranium, Inc., Coles Hill, LLC, Bowen Minerals, LLC. (ham)
03/13/2017	88	MANDATE of USCA as to 80 Notice of Appeal filed by Virginia Energy Resources, Inc., Virginia Uranium, Inc., Coles Hill, LLC, Bowen Minerals, LLC. (ham)

03/14/2017	89	Order for Release of Appeal Bond to Plaintiffs/Appellants. Signed by Judge Jackson L. Kiser on 3/14/17. (ham)
03/15/2017	90	Disbursement made to counsel per order 89 as to Virginia Uranium, Inc. (erf) (Entered: 03/20/2017)
04/26/2017	91	USCA Notice of Supreme Court Remark: Petition for Writ of Certiorari filed. (ham)
05/22/2018	92	USCA Notice of Supreme Court Remark: Petition for Writ of Certiorari granted. (mlh)

General Docket
United States Court of Appeals
for the Fourth Circuit

Court of Appeals Docket #: 16-1005
Virginia Uranium, Inc. v. John Warren

01/05/2016	1	Case docketed. Originating case number: 4:15-cv-00031-JLK-RSB. Case manager: MRadday. [16-1005] MR [Entered: 01/05/2016 08:43 AM]
01/05/2016	2	DOCKETING NOTICE issued Re: [1] case docketed Initial forms due within 14 days. Originating case number: 4:15-cv-00031-JLK-RSB. Mailed to: attorneys Kirk and Weitzner. [16-1005] MR [Entered: 01/05/2016 09:34 AM]
01/05/2016	3	BRIEFING ORDER filed. Mailed to: attorneys Kirk and Weitzner. Opening Brief and Appendix due 02/16/2016. Response Brief due 03/18/2016 [16-1005] MR [Entered: 01/05/2016 09:36 AM]
01/05/2016	4	APPEARANCE OF COUNSEL (Local Rule 46(c)) by J. Duncan Pitchford for Melanie D. Davenport, Michael Dowd, Maurice Jones, Bradley C. Lambert, Terry McAuliffe, David K. Paylor, James P. Skorupa, Conrad Spangler, Molly J. Ward, Robert J. Weld and Justin Williams.[999729938] [16-1005] Jonathan Pitchford [Entered: 01/05/2016 11:05 AM]

01/05/2016	5	APPEARANCE OF COUNSEL (Local Rule 46(c)) by Rhodes B. Ritenour for Melanie D. Davenport, Michael Dowd, Maurice Jones, Bradley C. Lambert, Terry McAuliffe, David K. Paylor, James P. Skorupa, Conrad Spangler, Molly J. Ward, Robert J. Weld and Justin Williams.[999729942] [16-1005] Jonathan Pitchford [Entered: 01/05/2016 11:07 AM]
01/05/2016	6	ORDER filed [999730002] substituting party (FRAP 43) John W. Warren substituted for Conrad Spangler Copies to all parties. Mailed to: attorneys Kirk and Weitzner. [16-1005] MR [Entered: 01/05/2016 11:34 AM]
01/05/2016	7	APPEARANCE OF COUNSEL (Local Rule 46(c)) by Charles J. Cooper for Bowen Minerals, LLC, Coles Hill, LLC, Virginia Energy Resources, Inc. and Virginia Uranium, Inc..[999730519] [16-1005] Charles Cooper [Entered: 01/05/2016 04:29 PM]
01/05/2016	8	APPEARANCE OF COUNSEL (Local Rule 46(c)) by Michael W. Kirk for Bowen Minerals, LLC, Coles Hill, LLC, Virginia Energy Resources, Inc. and Virginia Uranium, Inc..[999730523] [16-1005] Michael Kirk [Entered: 01/05/2016 04:32 PM]

01/05/2016	9	APPEARANCE OF COUNSEL (Local Rule 46(c)) by John D. Ohlendorf for Bowen Minerals, LLC, Coles Hill, LLC, Virginia Energy Resources, Inc. and Virginia Uranium, Inc..[999730526] [16-1005] John Ohlendorf [Entered: 01/05/2016 04:34 PM]
01/05/2016	10	DISCLOSURE OF CORPORATE AFFILIATIONS (Local Rule 26.1) by Appellant Virginia Uranium, Inc.. Was any question on Disclosure Form answered yes? Yes [999730532] [16-1005] Charles Cooper [Entered: 01/05/2016 04:41 PM]
01/05/2016	11	DISCLOSURE OF CORPORATE AFFILIATIONS (Local Rule 26.1) by Appellant Coles Hill, LLC. Was any question on Disclosure Form answered yes? No [999730533] [16-1005] Charles Cooper [Entered: 01/05/2016 04:42 PM]
01/05/2016	12	DISCLOSURE OF CORPORATE AFFILIATIONS (Local Rule 26.1) by Appellant Bowen Minerals, LLC. Was any question on Disclosure Form answered yes? No [999730536] [16-1005] Charles Cooper [Entered: 01/05/2016 04:43 PM]
01/05/2016	13	DISCLOSURE OF CORPORATE AFFILIATIONS (Local Rule 26.1) by Appellant Virginia Energy Resources, Inc.. Was any question on Disclosure

Form answered yes? Yes [999730538] [16-1005] Charles Cooper [Entered: 01/05/2016 04:44 PM]

01/05/2016 14 DOCKETING STATEMENT by Appellants Bowen Minerals, LLC, Coles Hill, LLC, Virginia Energy Resources, Inc. and Virginia Uranium, Inc.. [16-1005] Charles Cooper [Entered: 01/05/2016 05:02 PM]

01/05/2016 15 MOTION by Appellants Bowen Minerals, LLC, Coles Hill, LLC, Virginia Energy Resources, Inc. and Virginia Uranium, Inc. to extend filing time for opening brief and appendix until March 17, 2016. Date and method of service: 01/05/2016 ecf. [999730565] [16-1005] Charles Cooper [Entered: 01/05/2016 06:04 PM]

01/06/2016 16 NOTICE ISSUED re: case caption modified.. [16-1005] MR [Entered: 01/06/2016 09:04 AM]

01/06/2016 17 ORDER filed [999730747] granting Motion to extend filing time [15]. Opening brief and appendix due 03/17/2016. Response brief due 04/18/2016. Copies to all parties.. [16-1005] MR [Entered: 01/06/2016 09:11 AM]

01/07/2016 18 APPEARANCE OF COUNSEL (Local Rule 46(c)) by Stuart A. Raphael for Bradley C. Lambert, James P.

Skorupa and John Warren.[999731911] [16-1005] Stuart Raphael [Entered: 01/07/2016 01:31 PM]

03/17/2016 19 BRIEF by Appellants Bowen Minerals, LLC, Coles Hill, LLC, Virginia Energy Resources, Inc. and Virginia Uranium, Inc. in electronic and paper format. Type of Brief: OPENING. Method of Filing Paper Copies: mail. Date Paper Copies Mailed, Dispatched, or Delivered to Court: 03/17/2016. [999777153] [16-1005] Charles Cooper [Entered: 03/17/2016 05:37 PM]

03/17/2016 20 FULL ELECTRONIC APPENDIX and full paper appendix by Appellants Bowen Minerals, LLC, Coles Hill, LLC, Virginia Energy Resources, Inc. and Virginia Uranium, Inc.. Method of Filing Paper Copies: mail. Date paper copies mailed dispatched or delivered to court: 03/17/2016. [999777155] [16-1005] Charles Cooper [Entered: 03/17/2016 05:44 PM]

03/17/2016 21 OPENING BRIEF (PAPER) file-stamped, on behalf of Bowen Minerals, LLC, Coles Hill, LLC, Virginia Energy Resources, Inc. and Virginia Uranium, Inc.. Number of pages: [88]. Sufficient: YES. Number of Copies: [1]. Entered on Docket Date: 03/18/2016. Received by clerk

date: 03/18/2016. [999777597] [16-1005] MR [Entered: 03/18/2016 12:25 PM]

03/17/2016 22 APPENDIX (PAPER) file-stamped, on behalf of Bowen Minerals, LLC, Coles Hill, LLC, Virginia Energy Resources, Inc. and Virginia Uranium, Inc.. Total number of volumes (including any sealed): 3. Total number of pages in all volumes: 941. Total number of sealed volumes: 0. Sufficient? Yes. CD/DVD/Other exhibit? No. Number of Copies: 1. Entered on Docket Date: 03/18/2016. Received by clerk date: 03/18/2016. [999777601] [16-1005] MR [Entered: 03/18/2016 12:29 PM]

04/11/2016 23 APPEARANCE OF COUNSEL (Local Rule 46(c)) by Peter C. Meier for Nuclear Energy Institut [999792753] [16-1005] Peter Meier [Entered: 04/11/2016 02:26 PM]

04/11/2016 24 DISCLOSURE OF CORPORATE AFFILIATIONS (Local Rule 26.1) by Potential Amicus Curiae Nuclear Energy Institute. Was any question on Disclosure Form answered yes? No [999792760] [16-1005] Peter Meier [Entered: 04/11/2016 02:28 PM]

04/11/2016 25 MOTION by Potential Amicus Curiae Nuclear Energy Institute to file amicus curiae brief (FRAP 29(e)) with consent of all parties on appeal outside time allowed by FRAP 29(e)..

Date and method of service: 04/11/2016 ecf. [999792784] [16-1005] Peter Meier [Entered: 04/11/2016 02:35 PM]

04/11/2016 26 AMICUS CURIAE/INTERVENOR BRIEF by Potential Amicus Curiae Nuclear Energy Institute in electronic and paper format. Type of Brief: Amicus Curiae. Method of Filing Paper Copies: hand delivery. Date Paper Copies Mailed, Dispatched, or Delivered to Court: 04/11/2016. [999792794] [16-1005] Peter Meier [Entered: 04/11/2016 02:41 PM]

04/11/2016 28 AMICUS CURIAE BRIEF (PAPER) file-stamped, on behalf of Nuclear Energy Institute. Number of pages: [32]. Number of Copies: [1]. Entered on Docket Date: 04/12/2016. Received by clerk date: 04/11/2016. [999793625] [16-1005] MR [Entered: 04/12/2016 12:32 PM]

04/12/2016 27 ORDER filed [999793601] granting Motion to file amicus curiae brief [25]. Disclosure Statement filed (if corporate amicus)? Y. Appearance Form filed? Y. Copies to all parties.. [16-1005] MR [Entered: 04/12/2016 12:21 PM]

04/18/2016 29 BRIEF by Appellees Bradley C. Lambert, James P. Skorupa and John Warren in electronic and paper

format. Type of Brief: RESPONSE. Method of Filing Paper Copies: hand delivery. Date Paper Copies Mailed, Dispatched, or Delivered to Court: 04/18/2016. [999797224] [16-1005] Stuart Raphael [Entered: 04/18/2016 01:47 PM]

04/18/2016 30 RESPONSE BRIEF (PAPER) file-stamped, on behalf of Bradley C. Lambert, James P. Skorupa and John Warren. Number of pages: [83]. Sufficient: YES. Number of Copies: [4]. Entered on Docket Date: 04/19/2016. Received by clerk date: 04/18/2016. [999797859] [16-1005] MR [Entered: 04/19/2016 09:15 AM]

04/25/2016 31 MOTION by Dan River Basin Association and Roanoke River Basin Association as Amici Curiae in Support of Defendants-Appellees to file amicus curiae brief (FRAP 29(e)) with consent of all parties on appeal within time allowed by FRAP 29(e).. Date and method of service: 04/25/2016 ecf. [999803951] [16-1005] William Cleveland [Entered: 04/25/2016 04:53 PM]

04/25/2016 32 AMICUS CURIAE/INTERVENOR BRIEF by Dan River Basin Association and Roanoke River Basin Association as Amici Curiae in Support of Defendants-Appellees in electronic and paper format. Type of Brief: Amicus Curiae. Method of

Filing Paper Copies: mail. Date Paper Copies Mailed, Dispatched, or Delivered to Court: 04/26/2016. [999803968] [16-1005] William Cleveland [Entered: 04/25/2016 05:01 PM]

04/25/2016 36 DISCLOSURE OF CORPORATE AFFILIATIONS (Local Rule 26.1) by Amicus Supporting Appellee Dan River Basin Association. Was any question on Disclosure Form answered yes? No [999812628] [16-1005] MR [Entered: 05/04/2016 11:33 AM]

04/25/2016 37 DISCLOSURE OF CORPORATE AFFILIATIONS (Local Rule 26.1) by Amicus Supporting Appellee Roanoke River Basin Association. Was any question on Disclosure Form answered yes? No [999812632] [16-1005] MR [Entered: 05/04/2016 11:34 AM]

04/25/2016 38 AMICUS CURIAE BRIEF (PAPER) file-stamped, on behalf of Dan River Basin Association and Roanoke River Basin Association. Number of pages: [44]. Number of Copies: [1]. Entered on Docket Date: 05/04/2016. Received by clerk date: 04/29/2016. [999812636] [16-1005] MR [Entered: 05/04/2016 11:36 AM]

04/27/2016 34 ORDER filed [999805525] granting motion to file amicus curiae brief [31].

Disclosure Statement filed (if corporate amicus)? N/A. Appearance Form filed? Y. Copies to all parties.. [16-1005] MR [Entered: 04/27/2016 08:07 AM]

05/02/2016 35 BRIEF by Appellants Bowen Minerals, LLC, Coles Hill, LLC, Virginia Energy Resources, Inc. and Virginia Uranium, Inc. in electronic and paper format. Type of Brief: REPLY. Method of Filing Paper Copies: mail. Date Paper Copies Mailed, Dispatched, or Delivered to Court: 05/02/2016. [999810190] [16-1005] Charles Cooper [Entered: 05/02/2016 03:06 PM]

05/02/2016 39 REPLY BRIEF (PAPER) file-stamped, on behalf of Bowen Minerals, LLC, Coles Hill, LLC, Virginia Energy Resources, Inc. and Virginia Uranium, Inc.. Number of pages: [32]. Sufficient: YES. Number of Copies: [1]. Entered on Docket Date: 05/05/2016. Received by clerk date: 05/05/2016. [999813920] [16-1005] MR [Entered: 05/05/2016 12:56 PM]

07/15/2016 40 CASE TENTATIVELY CALENDARED for oral argument during the 10/25/16 - 10/28/16 argument session. Notify Clerk's Office of any scheduling conflict by: 07/25/2016 [16-1005] JLC [Entered: 07/15/2016 03:41 PM]

07/18/2016 41 Letter re: [40] case tentatively calendared by Appellees Bradley C. Lambert, James P. Skorupa and John Warren. [999890372] [16-1005] Stuart Raphael [Entered: 07/18/2016 01:18 PM]

07/19/2016 42 Additional copies of OPENING BRIEF, JOINT APPENDIX (vols. 1-3), and REPLY BRIEF received from Bowen Minerals, LLC, Coles Hill, LLC, Virginia Energy Resources, Inc. and Virginia Uranium, Inc.. [16-1005] AC [Entered: 07/21/2016 08:50 AM]

08/04/2016 43 COPY FOLLOW-UP NOTICE issued to Nuclear Energy Institute and Dan River Basin Association and Roanoke River Basin Association requesting additional copies of Amicus briefs. Additional copies due 08/09/2016 [16-1005] AD [Entered: 08/04/2016 03:00 PM]

08/08/2016 44 Additional copies of AMICUS BRIEF received from Nuclear Energy Institute. [16-1005] AD [Entered: 08/08/2016 09:41 AM]

08/08/2016 45 Additional copies of AMICUS BRIEF received from Dan River Basin Association and Roanoke River Basin Association. [16-1005] AD [Entered: 08/08/2016 04:12 PM]

08/11/2016 46 CASE CALENDARED for oral argument. Date: 10/28/2016. Registration Time: 7:45 - 8:00. Daily

		Arguments Begin: 8:30. Oral argument acknowledgment form due within 5 days. [16-1005] JLC [Entered: 08/11/2016 04:13 PM]
08/12/2016	47	ORAL ARGUMENT ACKNOWLEDGMENT by Appellants Bowen Minerals, LLC, Coles Hill, LLC, Virginia Energy Resources, Inc. and Virginia Uranium, Inc.. Counsel arguing: Charles J. Cooper Opening argument time: 13 minutes Rebuttal argument time: 7 minutes [999909308] [16-1005] Charles Cooper [Entered: 08/12/2016 10:37 AM]
08/15/2016	48	ORAL ARGUMENT ACKNOWLEDGMENT by Appellees Bradley C. Lambert, James P. Skorupa and John Warren. Counsel arguing: Stuart A. Raphael Opening argument time: 20 [999910256] [16-1005] Stuart Raphael [Entered: 08/15/2016 01:28 PM]
10/28/2016	49	ORAL ARGUMENT heard before the Honorable William B. Traxler, Jr., Albert Diaz and Pamela A. Harris. Attorneys arguing case: Mr. Charles J. Cooper for Appellants Virginia Uranium, Inc., Coles Hill, LLC, Bowen Minerals, LLC and Virginia Energy Resources, Inc. and Stuart Alan Raphael for Appellees Bradley C. Lambert, James P. Skorupa and John Warren. Courtroom Deputy:

Jocelyn Mitchell Manion. [999957350] [16-1005] JM [Entered: 10/28/2016 12:33 PM]

01/30/2017 50 Letter re: Rhodes Ritenour no longer employed by AG's office and no longer participating on appeal by Appellee Vicki Montgomery in 16-1916, Appellees Bradley C. Lambert and James P. Skorupa in 16-1005, Appellee Denise Lawhorn in 16-1936. [1000012647] [16-1916, 16-1005, 16-1936] AW [Entered: 01/30/2017 10:18 AM]

02/17/2017 51 PUBLISHED AUTHORED OPINION filed. Originating case number: 4:15-cv-00031-JLK-RSB. [1000025607]. [16-1005] MR [Entered: 02/17/2017 08:50 AM]

02/17/2017 52 JUDGMENT ORDER filed. Disposition method: 16-1005 opn.p.arg. Decision: Affirmed. Originating case number: 4:15-cv-00031-JLK-RSB. Entered on Docket Date: 02/17/2017. [1000025610] Copies to all parties and the district court/agency.. [16-1005] MR [Entered: 02/17/2017 08:53 AM]

02/17/2017 53 OPINION ATTACHMENTS (2). [16-1005] ZS [Entered: 02/22/2017 03:23 PM]

03/13/2017 54 Mandate issued. Referencing: [52] Judgment Order, [51] Published Authored Opinion. Originating case

number: 4:15-cv-00031-JLK-RSB.. [16-1005] MR [Entered: 03/13/2017 07:49 AM]

04/26/2017 55 SUPREME COURT REMARK– petition for writ of certiorari filed. 04/21/2017. 16-1275. [16-1005] SJC [Entered: 04/26/2017 02:45 PM]

05/22/2018 56 SUPREME COURT REMARK– petition for writ of certiorari granted. 05/21/2018 [16-1005] SJC [Entered: 05/22/2018 07:58 AM]

PilotOnline.com

Cuccinelli, McAuliffe weigh in on uranium mining

By Steve Szkotak
The Associated Press
© March 19, 2013

RICHMOND

If Gov. Bob McDonnell decides against reviving the issue of uranium mining this year, the two men who are likely to succeed him are willing to keep the issue alive in 2014.

Republican Attorney General Ken Cuccinelli and Democrat Terry McAuliffe conditionally said they would be open to consider uranium mining, in response to an Associated Press request for their positions on the fiercely debated subject. Each identified key factors in their ultimate decision, such as its economic impact and whether mining can be done safely.

Cuccinelli goes further than his presumptive Democratic opponent in November, stating that some of those questions could be answered if state regulations governing mining were in place before the General Assembly takes up the issue anew, as proponents have suggested.

"This would clarify what would be involved and would eliminate any uncertainty prior to the General Assembly's decision," Cuccinelli's office said in a statement.

Despite a big build up to the 2013 session of the General Assembly, proposals to end a 1983 prohibition on

uranium mining failed to even achieve a committee vote amid almost certain defeat. Mining supporters then suggested that McDonnell direct the appropriate agencies to draw up regulations to better inform legislators when they take up the issue again, which is expected.

McDonnell has said he is giving the suggestion any thought while he continues to review legislation passed by the General Assembly and until after an April veto session. He has also raised the possibility he might not take a public position on uranium mining.

The issue is being pushed by Virginia Uranium Inc., which wants to mine a 119-million-pound deposit of the radioactive ore in Pittsylvania County. Is the largest known uranium deposit in the United States.

Before it can mine, however, a decades-old ban must be lifted by the General Assembly. Virginia Uranium has made it clear it will not walk away from a deposit it values at $7 billion.

McAuliffe and Cuccinelli offered succinct responses to the question of uranium mining, with the attorney general offering a slightly more expansive answer.

"Mr. Cuccinelli feels the factors that should be weighed . . . include the safety of miners and the surrounding community, jobs created, tax revenues generated, the environmental impact, the cultural impact on the region, and energy independence for Virginia and America," wrote Caroline Gibson, a spokeswoman for his office.

She said Cuccinelli "believes that it would be appropriate" to have regulations in place before the General Assembly considers ending the ban.

McAuliffe's campaign issued his response:

"Any economic proposal in these tough times merits a hard look. However, I would need to be certain that mining uranium can be done safely and cleaned up completely before a moratorium is lifted."

McAuliffe added today, "So far I have not seen that."

McAuliffe is a businessman and former chairman of the National Democratic Committee.

Opponents and supporters of mining would argue those questions both men cite have already been answered. Uranium mining has been studied extensively over the past few years, from an environmental and economic perspective. A study by the National Academy of Sciences, completed in late 2011, is the most widely accepted.

The mostly [sic] commonly cited portion of the report states Virginia would have to overcome "steep hurdles" before allowing mining and milling of the ore to ensure the safety of workers, the public and the environment. Mining supporters cite a section of the report that states "internationally accepted best practices" governing mining could be a starting point for Virginia.

Full-fledged uranium mining has never occurred on the East Coast. Critics say the state's climate is too wet

and prone to tropical storms to allow uranium mining and milling, or the separation of ore from rock.

Virginia Uranium says mining and milling can be done safely and create jobs in the economically depressed Southside region of the state.

Lt. Gov. Bill Bolling was expected to offer anti-mining voters an option in November after he declared his opposition to uranium mining, but has since abandoned a GOP or independent bid for governor.

UNITED STATES DISTRICT COURT
WESTERN DISTRICT OF VIRGINIA
Danville Division

VIRGINIA URANIUM, INC., *et al.*,

Plaintiffs,

v. CIVIL ACTION NO.

TERRY McAULIFFE, *et al.*, 4:15CV-31-JLK

Defendants.

MEMORANDUM IN SUPPORT OF MOTION TO DISMISS

Mark R. Herring
Attorney General

John W. Daniel, II
Deputy Attorney General

Rhodes B. Ritenour (VSB No. 71406)*
Deputy Attorney General

Lynne C. Rhode
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*Counsel of record for Defendants

* * *

[14] **II. The Atomic Energy Act does not prohibit Virginia from considering health and safety concerns in regulating conventional uranium mining.**

In light of the foregoing, it cannot be questioned that Virginia plainly enjoys the authority to regulate conventional uranium mining on private property. And, as noted previously, the Plaintiffs do not appear to seriously contest the issue in their Complaint. *See* Complaint at 13 ¶ 37 (Page ID#13). The Plaintiffs nonetheless maintain that Va. Code § 45.1-283 is preempted by the Atomic Energy Act because Virginia may have considered radiological safety issues in enacting the legislation. The Plaintiffs point to a number of past statements by members of [15] various study commissions as evidence that Virginia rested its decision to both pass the moratorium, and to not subsequently enact a regulatory scheme permitting conventional uranium mining, upon radiological safety concerns. According to the Plaintiffs, this consideration is precluded by the sweep of the AEA.

Assuming for purposes of the current motion the Plaintiffs are correct, and one of the purposes[16] behind

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[16] It bears noting that "inquiry into legislative motive is often an unsatisfactory venture," and this is particularly true for the Virginia General Assembly, as it does not regularly publish committee reports or other similar documentation, in contrast to those available for evaluating the motivation behind federal statutes. *PG&E*, 461 U.S. at 216 (citing *United States v. O'Brien*, 391 U.S. 367, 383 (1968)). Further, it is "particularly pointless" to do so in this case where "it is clear that the States have been allowed to retain authority over" uranium mining. *Id.*

enacting[16] § 45.1-283 was to address potential radiological safety concerns,[17] nothing in the AEA precludes such a consideration. As noted above, nothing in the text of the statute itself, the legislative history behind its enactment, subsequent amendments to the statute or the NRC's interpretation of its power under the Act suggest the AEA reaches conventional uranium mining on private lands. It "would be odd, if not irrational, to conclude" that Congress excluded uranium mining from the ambit of the Act, yet at the same time somehow expressed a "clear and manifest purpose" to limit the issues the Commonwealth may consider in exercising its historic police powers. *English*, 496 U.S. at 86; *PG&E*, 461 U.S. at 206.

This, however, is the conclusion the Plaintiffs claim *PG&E* and its progeny compel. Pointing to language in the decision that the "Federal Government

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[16] Much of what the Plaintiffs discuss in their lengthy narrative occurred after the enactment of the statute. How these post-hoc actions bear upon the decision to enact the statute is difficult to discern.

[17] The attachments to the Plaintiffs' Complaint fail to support their central tenet, which is that the 1982 statute arose out of concerns for radiological safety. Both the 1981 House Joint Resolution (attached as Exhibit 1 to the Complaint) and the provisions of Chapter 269 of the 1982 Acts of Assembly, wherein the General Assembly adopted Va. Code § 45.1-283 (attached as Exhibit 2 to the Complaint), state that the study of uranium mining, and then the enactment of the moratorium, stem from the General Assembly's concerns about potential adverse effects upon the "environment and the health and safety of the public." Va. Code §45.1-272 (1982). At no point does the General Assembly reference radiological safety; rather only the historic, police power concerns of health, safety and general welfare. *See* Section III, *infra*.

has occupied the entire field of nuclear safety concerns," the Plaintiffs contend any decision that rests, in part, upon [16] radiological safety is solely the province of the United States. *PG&E*, 461 U.S. at 212. Nothing in the texts of the decisions compels such a bizarre conclusion.

First, as noted previously, the Supreme Court has three times considered the preemptive effect of the Act, and on all three occasions, even in areas where the NRC robustly exercises its regulatory authority, found state regulation or state law not preempted by the Act. *See PG&E*, 461 U.S. at 222-23 (concluding the AEA did not preempt a California statute prohibiting nuclear plant construction until development of plan for waste disposal); *Silkwood*, 464 U.S. at 256 (finding that the AEA did not preempt state law allowing for the award of punitive damages for safety violations at a nuclear fuel facility); *English*, 492 U.S. at 90 (concluding that the AEA did not prohibit a claim of intentional infliction of emotional distress). The *PG&E* court took pains to note that the Act reserves to the several states – again, even in areas where the NRC has exercised the full scope of its statutory mandate – "their traditional authority" over such issues as "land use." *PG&E*, 461 U.S. at 212. Further, in *English*, the Court pared back some of the broad dicta in *PG&E* by noting "for a state law to fall within the pre-empted zone, it must have some direct and substantial effect on the decisions made by those *who build or operate nuclear facilities* concerning radiological safety levels." *English*, 496 U.S. at 85 (emphasis added).

Indeed, the cases where lower courts have found preclusive effect of the Act have been associated with direct impacts upon those who build or operate nuclear facilities regulated by the NRC. For example, in *Entergy Nuclear Vermont Yankee, LLC v. Shumlin*, 733 F.3d 393 (2nd Cir. 2013), relied upon by the Plaintiffs, the state law in question attempted to impose safety requirements at the Vermont Yankee nuclear power plant. In *United States v. Manning*, 527 F.3d 828 (9th Cir. 2008), the state law involved "cleanup of existing contamination" at the [17] Hanford nuclear reservation. *Id.* at 830. In *Westinghouse*, the court addressed radiological cleanup of a former nuclear fuel facility. *Id.*, 487 F. Supp. 2d at 1078.

In each of these situations, the "matter on which the State assert[ed] the right to act" was clearly "regulated by the [AEA]." *PG&E*, 461 U.S. at 213. This stands in stark contrast to the question of conventional uranium mining, which, as shown, is not in any way regulated by the AEA. Nothing suggests the state may not exercise the full scope of its "historic police powers", including the ability to address radiological safety concerns, in those areas which are not regulated by the AEA. *PG&E*, 461 U.S. at 206.

Further, states have continued to exercise their rights to regulate conventional uranium mining. For example, the Texas Uranium Surface Mining and Reclamation Act, Tex. Nat. Res. Code § 131 *et seq.*, empowers Texas state regulators to require mine operators address any number of health and safety concerns before they receive a permit to conduct conventional

uranium mining activities in Texas. The enabling regulations direct that any mine operations must be conducted "as to prevent unreasonable degradation to land and water resources" and otherwise to "prevent adverse effects to society and the environment." Tit. 16, Part 1, Ch. 11, R. 11.71 Texas Admin. Code. While no state could intrude upon areas regulated by other federal statutes (such as the Clean Air Act), no provision of the AEA suggests that a state could not consider the full scope of potential environmental effects, including radiologic, in otherwise regulating conventional uranium mining.

* * *

APR 28 1980

MEMORANDUM

FOR: Chairman Ahearne

FROM: Howard K. Shapar
Executive Legal Director

THRU: William J. Dircks
(Signed) William J. Dircks
Acting Executive Director
for Operations

SUBJECT: OELD LEGAL OPINION ON TWO QUESTIONS RELATING TO OPERATION OF THE URANIUM MILL TAILINGS RADIATION CONTROL ACT OF 1973

Following your recent meeting with Governor Herschler of Wyoming, (which capped a series of meetings and exchanges of letters with the Governor and other officials of the State), you asked for answers to the following questions:

1. What is the extent, if any, of NRC's legal authority to impose license conditions to protect groundwater from contaminants which result from licensed operations connected with in-situ extraction of source material?

2. Has non-Agreement State authority over the non-radiological hazards of uranium mill tailings been preempted by the Federal Government and, if not, what, if any, authority is shared between the NRC and the non-Agreement States.

The preemption issue, in particular, is extremely complex because of some cumbersome and internally inconsistent statutory language that the Attorney General of Wyoming has correctly likened to a Brobdingnagian Knot." Comprehensive legal analyses of each question are presented in the two attachments to this memorandum. A summary of the conclusions is presented below.

Question 1. We conclude that the NRC has the legal authority to impose groundwater protection conditions upon its in-situ extraction licensees under the licensing and regulatory authority found in the Atomic Energy Act of 1954, as amended by the Uranium Mill Tailings Radiation Control Act of 1978 as amended, (Mill Tailings Act.) This is so even though the definition of uranium mill tailings in our regulations (10 CFR 40.4(a-1)) excludes underground ore bodies depleted by solution extraction. This is because the potential interaction with groundwater is so integrally related to the above-ground processing (which we do license) as to be properly the subject of license conditions, just as, historically, we were able to regulate the generation (but not subsequent use) of tailings from the conventional milling process. This specific authority reinforces the general authority available under the National Environmental Policy Act to impose environmental license conditions.

Question 2. The second question presents extremely difficult questions of the proper construction of the Mill Tailings Act and the so-called remedial amendments to

it. The problem is compounded by the paucity of legislative history.

A conclusion of preemption would mean that the federal government has so completely occupied the field of regulation over the nonradiological hazards of uranium mill tailings that there is no room for any exercise of non-Agreement State authority in this area. Conversely, concurrent jurisdiction would mean that non-Agreement States could exercise authority over the very same subject matter as the NRC – the nonradiological hazards of uranium mill tailings – though such concurrent exercise of authority would have to be consistent with the federal scheme of regulation. We note, however, that even where there is concurrent jurisdiction, the supremacy clause of the Constitution requires that particular state regulation must give way to federal authority in the event of a conflict such that compliance with both federal and state regulatory requirements is impossible.

Though the question is very close, we conclude that the better legal view is that there is insufficient evidence of Congressional intent to completely and exclusively occupy the field to override the strong presumption against implied preemption of historic state policy powers to regulate matters affecting the public health and safety. There is, therefore, in our view, concurrent jurisdiction over the nonradiological hazards of uranium mill tailings. This conclusion is somewhat stronger with respect to the period before November 8, 1981, because section 204(h)(1) of the Mill Tailings Act, added by the remedial amendments, operates (according

to the best interpretation) to expressly preserve previously existing non-Agreement State authority over the non-radiological hazards of uranium mill tailings until that date.

This paper has been coordinated with the Office of the General Counsel.

[Illegible] 4/24/80
Howard K. Shapar
Executive Legal Director

Attachments: As stated

Distribution:

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G. Cunningham 492-7203 (Attachment B)

ATTACHMENT A

NRC's AUTHORITY TO IMPOSE CONDITIONS TO PROTECT GROUNDWATER IN ITS LICENSES FOR THE IN SITU EXTRACTION OF SOURCE MATERIAL IN NON-AGREEMENT STATES

This analysis deals with the question of NRC's legal authority to impose license conditions in its licenses for the in situ extraction of source material to protect

groundwater from contaminants which result from the licensed activity in non-Agreement States.

In summary, the NRC has the legal authority to impose such license conditions under its licensing and regulatory authority in the Atomic Energy Act of 1954, as amended by the Uranium Mill Tailings Radiation Control Act of 1978. This specific authority reinforces the general authority available under the National Environmental Policy Act (NEPA) to impose environmental license conditions.[1]

The Factual Background

Uranium oxide (U_3O_4) is processed from uranium ore by a series of physical and chemical actions. The conventional uranium oxide production process is conducted in uranium mills which are generally located near uranium mines, and the mills receive uranium ore either directly from mines or from intermediate ore buying stations. Uranium ore is also processed by an in situ or solution extraction process which combines uranium mining and milling into essentially one operation.[2] This process, also called injection mining or

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[1] It is noted that other agencies may have regulatory authority in this area under other Federal laws, such as the Resource Conservation and Recovery Act of 1976, 42 U.S.C. § 6901 *et seq.*, the Federal Water Pollution Control Act, 33 U.S.C. § 1251 *et seq.* and the Safe Drinking Water Act, 42 U.S.C. § 300 *et seq.*

[2] In 1976, about 2% of the total uranium concentrate produced in the United States resulted from in situ operations. U.S. NUCLEAR REGULATORY COMMISSION, DRAFT GENERIC ENVIRONMENTAL IMPACT STATEMENT ON URANIUM MILLING, at 8-2 (NUREG-0511, April 1979). There is reason to

borehole leaching, involves (1) the injection of a leach solution (lixiviant) through lined wells into a uranium-bearing ore body to form a chemical compound with the uranium, (2) mobilization of the uranium complex formed, and (3) surface recovery of the solution bearing the uranium complex via production wells. Uranium is then separated from the pregnant leach solution by milling unit operations at the surface.[3]

Unlike conventional milling operations, in situ extraction requires no ore mining, transportation, crushing, or grinding. Moreover, the solution extraction process does not produce conventional mill tailings.[4] It does,

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believe, however, that in situ extraction will become a significant means of uranium extraction in the near future, especially in States like Texas and Wyoming, where small pockets of uranium deposits are particularly susceptible to in situ techniques. *See* U.S. NUCLEAR REGULATORY COMMISSION, TRANSCRIPT OF PUBLIC HEARING THE MATTER OF DRAFT GENERIC ENVIRONMENTAL IMPACT STATEMENT ON URANIUM MILLING, 46 *et seq*. (Denver, Oct. 1. 1979) (statement of James Montgomery, Colorado Department of Health).

[3] U.S. NUCLEAR REGULATORY COMMISSION, FINAL ENVIRONMENTAL STATEMENT RELATED TO THE OPERATION OF HIGHLAND URANIUM SOLUTION MINING PROJECT, 3-1 (NUREG-0489, Nov. 1978) Friedman, *Environmental Problems Relating to Uranium Mining and Milling*, 11 NAT. RESOURCES LAW. 277 (1978).

[4] Uranium ore usually contains only a very small fraction, often less than 1 percent by weight, of useable uranium oxide. Consequently, the milling process generates large amounts of waste tailings in the form of sand-like material. These "mill tailings" contain traces of the chemicals used to extract uranium from the ore and more importantly, most of the radioactivity naturally associated with the ore due to the presence of radioactive decay products of uranium. See NRC Policy Statement an "Assessment

however, produce solid and liquid wastes that are similar to those of conventional processes and that also require controlled disposal. Disposal of wastes from in situ operations may be accomplished through management like that used for conventional tailings piles or through deep well disposal, also known as reinjection. As a general rule, the most serious environmental impact associated with solution extraction operation is potential contamination of the groundwater by these wastes.[5]

Uranium milling, whether by the conventional or by the in situ process, has always required a license under the Atomic Energy Act. The uranium oxide is source material which the Atomic Energy Act of 1954 requires a license for its possession and use "after removal from its place of deposit in nature."[6]

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of Environmental Impacts of Uranium Mills in Agreement States," 43 F.R. No. 81 April 26, 1978.

[5] U.S. NUCLEAR REGULATORY COMMISSION, FINAL ENVIRONMENTAL STATEMENT RELATED TO THE OPERATION OF HIGHLAND URANIUM SOLUTION MINING PROJECT, 3-1 THROUGH 3-6 (NUREG-0489, Nov. 1978).

[6] "Source Material" is defined in section 11z of the Atomic Energy Act of 1954, 42 U.S.C. § 2014z. Section 62 of that Act, 42 U.S.C. § 2092, generally, requires a license for the transfer, receipt, possession etc. of "any source material after removal from its place of deposit in nature, except that licenses shall not be required for quantities of source material which, in the opinion of the Commission, are unimportant". NRC is authorized to issue licenses to possess and use source material resulting from uranium ore processing by Section 63 of the Atomic Energy Act, 42 U.S.C. § 2093. Regulatory requirements for such source material licenses are stated in 10 CFR Part 40 "Domestic Licensing of

During the two decades of licensing the processing of uranium ore, attention has focused on the control over mill tailings from conventional uranium milling, which, until the Atomic Energy Act was amended on November 8, 1978 by the Uranium Mill Tailings Radiation Control Act (UMTRCA),[7] were not themselves within the definition of source material (or any other material licensable by the Commission) and therefore the mill tailings themselves were beyond the NRC's licensing jurisdiction.[8]

In 1972, however, the AEC published a regulation requiring the preparation of an environmental impact statement, under the authority of the National Environmental Policy Act (NEPA),[9] for each license issued for uranium ore processing. Subsequent to 1972 and until the enactment of the UMTRCA, the NRC licensed and regulated uranium ore processing in

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Source Material." The conventional mining operation itself, however, is under the jurisdiction of other agencies and departments. For example, the Federal Mine Safety and Health Act of 1977 (Public Law 95-164, November 9, 1977) authorizes the Secretary of Labor to establish health and safety standards for mine workers. Also, the Environmental Protection Agency has authority for regulating certain environmental aspects of mining under the Resource Conservation and Recovery Act of 1976.

[7] Public Law 95-604, 42 U.S.C. § 7901 *et. seq.*

[8] Prior to November 8, 1978 regulatory jurisdiction under the Atomic Energy Act was exercised, however, over the generation of the tailings on the premise that such generation was an integral part of the mill operation.

[9] 42 U.S.C. § 4321. The procedures and guidelines for these statements are set forth in 10 CFR Part 51 "Licensing and Regulatory Policy and Procedures For Environmental Protection".

non-agreement states under its licensing and regulation of source material authority in the Atomic Energy Act as supplemented by NEPA. However, since the mill tailings themselves were not material licensable by NRC once the underlying source material license for the processing of the uranium ore terminated, there was no longer any legal basis for further NRC regulatory control of the mill tailings. This was one of the problems addressed by the Congress in the UMTRCA. That Act specifically expanded the Commission's Jurisdiction in this area and established a comprehensive regulatory regime for the licensing and regulation of the tailings or wastes produced by the extraction or concentration of uranium or thorium from any ore processed primarily for its source material content.

It is from this historical perspective that we now turn to consider the question raised. We consider first the relevant authority available to the Commission under the Atomic Energy Act, as amended by the UMTRCA. Then we will examine the relevance of NEPA to the exercise of the NRC's licensing authority.

II. The Jurisdiction of the NRC Under the Atomic Energy Act of 1954

A. The Atomic Energy Act, prior to its amendment by the UMTRCA.

For purposes of analysis, we begin with the relevant provisions of the Atomic Energy Act, which were not

affected by the UMTRCA.[10] There is no reasonable basis to question the clear and long-exercised legal authority available to the NRC to license the processing of uranium ore which produces source material. In the exercise of this licensing authority, the NRC is authorized to "govern any activity authorized pursuant to [the Atomic Energy] Act . . . in order to protect health and to minimize danger to life or property." 42 U.S.C. § 2201i.(3). In addition, the Commission is authorized to "establish by rule, regulation, or order, such standards and instructions to govern the possession and use of . . . source material . . . as the Commission may deem necessary or desirable . . . to protect health or to minimize danger to life or property." 42 U.S.C. § 2201b.. Each license "shall be in such form and contain such terms and conditions as the Commission may, by rule or regulation, prescribe to effectuate the provisions of [the Atomic Energy] Act . . . " 42 U.S.C. § 2233. NRC may exercise this regulatory authority and control over all integral parts of an activity, such as the extraction of source material, for which an NRC license is required by the Atomic Energy Act.

This application of the source material licensing and regulatory authority of the Atomic Energy Act has been consistently followed by the NRC and its predecessor for years.[11]

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[10] For purposes of the analysis at this point, we exclude the obligations placed on NRC by NEPA. This matter is discussed subsequently, under Part III.

[11] See legal opinions which are printed in the hearings, "Uranium Mill Tailings Control Act of 1978," before the Subcommittee

B. The Atomic Energy Act as amended by the UMTRCA.

The UMTRCA established a remedial action program to stabilize and control uranium tailings at inactive mill sites as well as a program for the regulation of mill tailings during uranium or thorium ore processing at active mill operations.[12] Nowhere in the UMTRCA is there specific mention of in situ extraction. In fact, it appears that the authors of the UMTRCA were primarily concerned with the mill tailings and waste from conventional uranium milling techniques, rather than in situ operations.[13] Nevertheless, as we discuss below, the UMTRCA did reinforce the NRC's licensing and regulatory authority under the Atomic Energy Act in respects which are applicable both to conventional milling and to in situ processing of uranium or thorium ores to produce source material.

1. The Statutory Language

Section 201 of the UMTRCA amends section 11e of the Atomic Energy Act by expanding the definition of

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on Energy and Power, Committee on Interstate and Foreign Commerce, 95th Cong., 2d Sess., June 19, 20 and August 2, 1978, at pp. 204-207.

[12] UMTRCA, section 2, 42 U.S.C. § 7901 and H.Rep. 95-1480, Pt. 2 at 25, 29 (1978). Title I of the UMTRCA is concerned with the remedial action program for inactive mill sites, and Title II with uranium mill tailings licensing and regulations.

[13] See H.Rep. 95-1480, Pt. 2, at 25, 29 (1978), which discusses the hazards associated with the enormous tailings piles generated in conventional milling operations.

byproduct material, a material over which the NRC clearly has licensing and regulatory jurisdiction under the Atomic Energy Act (Section 81, 42 U.S.C. § 2111), to include:[14]

> the tailings or wastes produced by the extraction or concentration of uranium or thorium from any ore processed primarily for its source material content.

A literal reading of this definition would encompass the above-ground wastes produced by any processing of ore primarily for its source material content. The scant legislative history which is pertinent supports this conclusion. (*infra.*, p. 11).[15]

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[14] Section 11e.(2), 42 U.S.C. § 2014e.(2).

[15] For purposes of this analysis, there is no need to consider the question of whether the depleted underground ore bodies left over from in situ leaching fall within the definition of tailings or waste. An earlier staff analysis concluded that the UMTRCA does not appear to require regulation of the subterranean ore bodies depleted by the in situ extraction process. See memorandum from Howard K. Shapar to the Commission, dated May 7, 1979. This memorandum also concluded, consistent with the text of this analysis, that the definition of byproduct material in the UMTRCA covers the management of the wastes from in situ extraction that occur above ground (including such wastes before they are re-injected). Regulatory authority over the surface material is a sound legal basis for imposing license conditions dealing with the possible contamination of groundwater by residues from that material or from the in situ operations.

The NRC's definition of section 11e.(2) byproduct material is consistent with the foregoing. 10 CFR § 40.4(a-1) (1979). The regulatory definition repeats the statutory definition in section 11e.(2) and adds these words "including discrete surface wastes resulting from uranium solution extraction processes. Underground ore

The UMTRCA also amended the Atomic Energy Act by adding a new section 84 (42 U.S.C. § 2114) which gives the NRC unambiguous regulatory authority over the nonradiological as well as the radiological hazards associated with the processing, possession and transfer of tailings or wastes as defined in section 11e.(2) of that Act.[16] The exercise of this authority must conform with the applicable general standards published by the Administrator of the Environmental Protection Agency (EPA) under new section 275 which was also added to the Atomic Energy Act by the UMTRCA.[17] Moreover, the Commission must assure that its general requirements for the management of tailings or wastes (as defined in section 11e.(2)) are, to the maximum extent practicable, at least comparable to requirements applicable to the possession, transfer, and disposal of similar hazardous material regulated by the Administrator

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bodies depleted by such solution extraction operations do not constitute 'byproduct material' within this definition." This definition could, of course, be revised if necessary to cover specifically the possible contamination of groundwater from in situ operations.

[16] Section 84 provides in part: "a. The Commission shall insure that the management of any byproduct material, as defined in section 11e.(2), is carried out in such manner as –

> (1) the Commission deems appropriate to protect the public health and safety and the environment from radiological and nonradiological hazards associated with the processing and with possession and transfer of such material".

[17] 42 U.S.C. § 2014a.(2).

of EPA under the Solid Waste Disposal Act, as amended.[18]

The new Section 275 to the Atomic Energy Act provides, among other things, that the Administrator of EPA shall publish[19]

> standards of general application for the protection of the Public health, safety, and the environment from radiological and nonradiological hazards associated with the processing and with the possession, transfer, and disposal of byproduct material, as defined in section 11e.(2) of this Act, at sites at which ores are processed primarily for their source material content or which are used for the disposal of such byproduct material.

The UMTRCA also amended Section 274 of the Atomic Energy Act to provide for additional criteria for the discontinuance by the NRC of its regulatory responsibilities over byproduct material, as defined in section 11e.(2), and the assumption thereof by an Agreement State.[20] Although the Agreement State area itself is beyond the scope of this analysis, included in the

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[18] 42 U.S.C. § 2014a.(3).

[19] Section 275 was added to the Atomic Energy Act by Section 206 of the UMTRCA. The quoted language is from Section 275b.(1), 42 U.S.C. § 2022b.(1).

[20] Section 204 of the UMTRCA amended Section 274 of the Atomic Energy Act in several significant respects, the most relevant for present purposes being the additional [sic] of a new section 274o.

requirements which an Agreement State must satisfy for NRC's jurisdiction to be discontinued are:[21]

> [require] compliance with standards which shall be adopted by the State for the protection of the public health, safety, and the environment from hazards associated with such material which are equivalent, to the extent practicable, or more stringent than, standards adopted and enforced by the Commission and the Administrator of the Environmental Protection Agency . . . * * * and
>
> [require procedures which] * * * [22]
>
> require for each license which has a significant impact on the human environment a written analysis * * * of the impact of such license, including any activities conducted pursuant thereto, on the environment, which analysis shall include – * * * *an assessment of any impact on any waterway and groundwater resulting from such activities.* (emphasis supplied).

2. The Legislative History

Colloquies during the floor debate in the Senate reveal an understanding, at least between the Senators involved, that the tailings or wastes from in situ operations ordinarily are covered by the regulatory program of NRC under the Atomic Energy Act as amended by

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[21] Section 274o.(2), 42 U.S.C. § 2021o.(2).

[22] Section 274o.(3)(c), 42 U.S.C. § 2021o.(3)(C)(ii).

the UMTRCA. In an exchange concerning in situ operations, Senators Wallop and Hart made it clear that in situ or solution extraction is within NRC jurisdiction, but may be appropriate for exemption from the land transfer requirements (Section 83) of the UMTRCA:

> Mr. WALLOP. Mr. President, I would like to obtain a clarification from the distinguished Senator from Colorado, the chairman of the Nuclear Regulation Subcommittee, of several points regarding title II of the bill as passed by the other body. First, I understand that the other body revised the bill to permit the Nuclear Regulatory Commission to exclude a uranium mill tailings disposal site from the requirement of a license if it determines that the site will not constitute an unreasonable risk to the public health and safety. This is the same discretionary authority now possessed by the Commission for other types of byproduct material. It occurs to me that this discretionary authority to grant exemptions from licensing would be particularly appropriate in the case of the so-called solution mining projects, in which uranium is brought to the surface by means of a fluid solution and is extracted with the remaining material pumped back below the surface. * * *
>
> Mr. HART. The distinguished Senator from Wyoming is entirely correct on each of the points he raised. The licensing exemption authority for mill tailings disposal sites could be exercised for sites where uranium mining and extraction is limited to solution techniques. In

> fact, the Commission may well exercise this exemption authority for other disposal sites where such an exemption would not constitute an unreasonable risk to public health and safety. * * * [23]

Senators Hart and Wallop also engaged in a discussion to the effect that "so-called solution mining projects, in which uranium is brought to the surface by means of a fluid solution and is extracted with the remaining material pumped back below the surface, would not generally be considered for transfer status under the new section 83b" of the Atomic Energy Act, which generally requires government ownership of land and tailings upon termination of the milling operations. Senator Wallop expressed his understanding that such projects would not generally be considered for transfer status under section 83b. Senator Hart agreed, saying:[24]

> Contrasted with conventional mining and milling methods which cause significant surface disturbance and require extensive reclamation, solution mining techniques allow for the recovery of relatively small and widely scattered deposits of uranium with minimal disturbance of the land and provide for waste materials to be reinjected into the original locations below the land surface from which the uranium was removed. Therefore, the necessity of transferring surface and subsurface

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[23] Cong. Rec., daily edition, October 14, 1978, at p. S19037.

[24] Cong. Rec., daily edition, October 13, 1978, at p. S18748.

> title may not exist where uranium mining and extraction is limited to solution techniques.

These exchanges show that during the legislative process, these two Senators understood that the regulatory program established under the UMTRCA would apply to all aspects of in situ operations. These exchanges indicate that these Senators expected the NRC to regulate the wastes from in situ operations, but believed that the requirements (in Section 83) for the transfer to the government of tailings and their disposal site from such operations would at least appropriately be the subject of the license exemption authorized in section 83b.[25]

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[25] Section 83b. of the Atomic Energy Act provides in pertinent part that:

> The Commission shall require . . . that prior to the termination of any license [which results in the production of any byproduct material, as defined in Section 11e.(2)] . . . title to the land . . . shall be transferred to . . . the United States, or . . . the State in which such land is located, at the option of such States". . . . "Unless the Commission determines prior to such termination that transfer of title to such land and such byproduct material is not necessary or desirable to protect the public health, safety, or welfare or to minimize or eliminate danger to life or property."

Section 81 of the Atomic Energy Act (42 U.S.C. § 2111) authorizes the Commission to exempt certain classes or quantities of byproduct material" from the requirements for a license set forth [in Section 81] when it makes a finding that "the exemption . . . of such material . . . will not constitute an unreasonable risk to the common defense and security and to the health and safety of the public."

There is also legislative history which is relevant in another context for purposes of this analysis. Each of the House Committee reports on the UMTRCA take note of the NRC's use of NEPA in regulating uranium milling:

> "As already noted, the NRC now regulates these tailings at active mills indirectly through its licensing of source material milling under the Atomic Energy Act of 1954, largely as a result of the enactment of the National Environmental Policy Act of 1969.[26]
>
> The Commission, in keeping with its responsibilities and authorities under the Atomic Energy Act and the National Environmental Policy Act, is the lead agency in regulation, oversight, and management of uranium mill tailings-related activities.[27]

If byproduct material as defined in section 11e.(2) is exempted from licensing under Section 81, section 84 of that Act (42 U.S.C. § 2114) authorizes the Commission to require the persons, officers, or instrumentalities so exempted from licensing "to conduct monitoring, perform remedial work, and to comply with such other measures as it may deem necessary or desirable to protect health or to minimize danger to life or property. . . ."

[26] H. REP. 95-1480, Pt. 2, 95th Cong., 2d Sess., 28 (1978). There was no Senate Committee report on Title II (Uranium Mill Licensing and Regulations) of the UMTRCA. There is a Senate Committee Report (S.Rep. 95-1266, Oct. 3, 1978) on remedial action program for inactive sites, however.

[27] H. REP. 95-1480, Pt. 1, 95th Cong., 2d Sess., 15 (1978).

One of the committee reports goes even further, describing the NRC's environmental duties under the UMTRCA as follows:

> With respect to nonradiological matters, the NRC, through its environmental review under the NEPA mandate, would impose controls consistent with those imposed by EPA on similar materials contained in other solid wastes subject to EPA authority.[28]

III. NEPA Obligations

The NRC staff in its uranium mill (conventional and in situ) licensing actions has followed the practice of imposing conditions to mitigate health and environmental impacts as shown to be reasonably necessary by the environmental review process under NEPA. The imposition of such license conditions is an application of Commission Policy which is rooted in the interpretation of the obligations placed on NRC by NEPA. Prior to EPA the Commission's regulatory responsibility was essentially confined to scrutiny of and protection against hazards from radiation and did not encompass consideration of non-radioiogical environmental issues.[29] Passage of NEPA, however, made ". . . environmental protection a part of the mandate of every federal agency and department . . . [The Commission] is not only permitted, but compelled, to take

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[28] *Id.*, at 16.

[29] *New Hampshire* v. *A.E.C.*, 406 F.2d 170, 175 (1st Cir. 1969), *cert. denied*, 395 U.S. 962 (1969).

environmental values into account . . . " and to consider environmental issues just as it considers other matters within its mandate. *Calvert Cliffs' Coordinating Committee* v. *A.E.C.*, 449 F.2d 1109, 1112 (D.C. Cir. 1971).

Shortly after the *Calvert Cliffs'* decision, the Commission issued new NEPA regulations which, in pertinent part, required the preparation of an environmental impact statement for each uranium mill licensed by it. The basic issue, for purposes of this analysis, is whether NEPA authorizes the Commission to exercise the regulatory power it unquestionably has – the power to license and regulate in situ operations in a fashion that will minimize to the extent practical the adverse environmental impacts which could result by the contamination of groundwater from such operations.[30] This issue must be resolved in the affirmative under the leading judicial interpretations of NEPA.

Section 102 of NEPA, 42 U.S.C. § 4332, is a direction to all agencies that " . . . to the fullest extent possible . . . the policies, regulations and public laws of the United States shall be interpreted and administered in accordance with the policies [of NEPA]." The Supreme

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[30] The Commission, as stated previously in the text, has statutory authority to condition its licenses, 42 U.S.C. § 2233. Implicit in the power to issue a license is the power to issue the license with reasonable conclusions.

Regulations of the Council on Environmental Quality (CEQ) on "Implementing National Environmental Policy Act Procedures," provide that the "lead agency shall include appropriate conditions in . . . permits or other approvals." (40 C.F.R. § 1505.3).

Court stated in *Kleppe* v. *Sierra Club*, 427 U.S. 390, 409 (1976) that:

> . . . NEPA announced a national policy of environmental protection and placed a responsibility upon the Federal Government to further specific environmental goals by 'all practicable means, consistent with other essential considerations of national policy.' NEPA § 101(b), 42 U.S.C. 4331(b).

As Judge Wright said in *Calvert Cliffs'*, 449 F.2d *supra* at 1128: "Clearly, it is pointless to 'consider' environmental costs without also considering action to avoid them." If the Commission is to administer the Atomic Energy Act, as amended, in accordance with the "national policy of environmental protection", *Kleppe*, *supra.*, then it must have the authority to use its license conditioning power when necessary to protect the environment just as even, prior to NEPA, it used that power to protect against threats to radiological safety. Cf. *Calvert Cliffs'*, *supra*.

Where, as here, an agency has a "jurisdictional toehold"[31] over a licensed activity, its authority to use that

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[31] These words were used by Judge Leventhal in *Henry* v. *F.P.C.*, 513 F.2d 395, note 33 on p. 407 (D.C. Cir. 1975). In *Henry*, the "jurisdictional toehold" was based on F.P.C. jurisdiction over a tap and value interconnection. By contrast, the NRC exercises licensing and regulatory jurisdiction over in situ operations which produce source material and section 11e.(2) byproduct material. Thus, the decision in *Kitchen* v. *F.C.C.*, 464 F.2d 801 (D. C. Cir. 1972) which deals with a matter (telephone exchange building) over which the FCC had never exercised regulatory jurisdiction is clearly inapposite here.

power to protect the environment has been unequivocally recognized by the courts. For example, in *Henry* v. *F.P.A.*, *supra*. at 406-407, a case in which the F.P.C. (now FERC) had such a "jurisdictional toehold", Judge Leventhal wrote:

> NEPA requires an integrated view of the environmental damage that may be caused by a situation, broadly considered, and its purpose is not to be frustrated by an approach that would defeat a comprehensive and integrated consideration by reason of the fact that particular . . . agencies have particular occasions for and limits on their exercise of jurisdiction.
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> * * *
>
> What is required is that the FPC, in deciding whether to grant, deny or condition certificates of public convenience and necessity for admittedly jurisdictional facilities, take into account the environmental costs of the gasification projects as a whole.

Similarly. the First Circuit decision in *Public Service Co.* v. *N.R.C.*, 582 F.2d 77 (1st Cir. 1978) is in point. The utility in that proceeding challenged the propriety of NRC's order to reroute transmission lines. The court, after agreeing that the Commission had the requisite jurisdiction (under the Atomic Energy Act) over the transmission lines, *Public Service Co.*, *supra*., note 7 at 81, and 85), rejected the view that NEPA permitted the Commission to consider the environmental impacts of various transmission lines routes, without acting to

minimize those impacts. (*Id.*, note 17 at 85). The Court said in this regard (*Id.*, at 85-86):

> Once having found that the Commission has jurisdiction over the transmission lines, we think it clear that, under the dictates of NEPA, it was obliged to minimize adverse environmental impact flowing therefrom. * * * The Commission has statutory authority to condition licenses. * * * In this instance, the Commission used one of its statutory powers in the furtherance of NEPA, whose mandate the Commission must follow. The Commission is under a dual obligation: to pursue the objectives of the Atomic Energy Act and those of the National Environmental Policy Act. 'The two statutes and the regulations promulgated under each must be viewed in *para* (sic) *materia*' *Citizens for Safe Power* v. *NRC*, 524 F.2d 1291, 1299 (C.A.D.C., 1975).

IV. Conclusion

The NRC has licensing and regulatory jurisdiction under the Atomic Energy Act over in situ operations which produce source material. Under that Act, as amended, by the UMTRCA, the Commission has the responsibility and authority to assure that byproduct material as defined in section 11e.(2), (i.e. tailings or wastes produced by the extraction or concentration of uranium or thorium from any ore processed primarily for its source material content), is managed so as to protect the public health and safety and the environment from radiological and nonradiological hazards

associated with the processing and with the possession and transfer of such material. Potential contaminants of groundwater resulting from in situ operations are clearly within the scope of the NRC's regulatory control under the Atomic Energy Act, as amended, by the UMTRCA. Moreover, this regulatory authority reinforces the NEPA authorization and directive for the Commission to exercise its licensing and regulatory authority in a fashion that will minimize to the extent practical the adverse environmental impacts resulting from the activities which it licenses, one of which is in situ operations.

In view of the foregoing, the NRC is authorized to impose conditions in a license for the in situ extraction of source material for the purpose of controlling possible contamination of groundwater from residues which are an integral part of that licensed operation.

ATTACHMENT B

THE EXTENT OF PREEMPTION OR CONCURRENT JURISDICTION OVER URANIUM MILL TAILINGS IN NON-AGREEMENT STATES

Introduction and Overview

The question has arisen as to whether non-Agreement State authority over the non-radiological hazards of uranium mill tailings has been preempted by the Federal Government and, if not, what, if any, authority regarding the regulation of tailings is shared between the NRC and the non-Agreement States. These

questions have not been comprehensively addressed by the NRC since the passage of the Uranium Mill Tailings Radiation Control Act of 1978.[1] The extreme complexity of the issue has been compounded by the passage of the so-called remedial amendments to the Mill Tailings Act[2] which, while clarifying that NRC was not to have concurrent jurisdiction with Agreement States during the three-year period before all the Act's provisions become fully effective, served to further confuse the situation with respect to non-Agreement States. The impetus for the present analysis is the recent discussion, in a series of meetings and letters, with the Governor and other officials of the State of Wyoming regarding the appropriate regulatory role of the State versus that of the NRC and the reestablishment of a cooperative working relationship between the two.[3]

The scope of this analysis is limited to authority to regulate non-radiological hazards of mill tailings since there appears to be neither confusion nor controversy about the clear intent of Congress, as expressed in the Atomic Energy Act of 1954, as amended by the Mill

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[1] Pub. L. No. 95-604, 92 Stat. 3021 (1978) (hereinafter "Mill Tailings Act").

[2] Pub. L. No. 96-106, 122.93 Stat. 799 (1979).

[3] Worthy of particular note are the February 27, 1980 letter from Governor Herschler to Chairman Ahearne and the December 1, 1979 memorandum to Governor Herschler from Wyoming Attorney General John D. Troughton, entitled "Proposed DEQ Regulations on Mill Tailings and In Situ Mining – Jurisdiction of DEQ Relative to that of NRC" (hereinafter. "Opinion of the Wyoming Attorney General").

Tailings Act, to provide for an exclusive federal regulatory role over the radiological hazards of uranium mill tailings. Though our analysis diverges from that of the Wyoming Attorney General on other issues, there is complete agreement on this point.

This memorandum is organized to present first a discussion, in summary form, of the preemption doctrine in order to provide an analytical framework. This is followed by a detailed discussion of those provisions of the Atomic Energy Act and the Mill Tailings Act which must be interpreted in order to reach a conclusion as to whether there is preemption or concurrent jurisdiction over the nonradiological hazards of uranium mill tailings. Finally, we conclude that the question is so close that the Commission could reasonably choose either interpretation, but that the better legal view is that non-Agreement States and the NRC have concurrent jurisdiction to regulate the non-radiological hazards of mill tailings, both before and after the November 8, 1981 date upon which the Mill Tailings Act becomes fully effective. As will be shown, the case for concurrent jurisdiction before November 8, 1981 is based upon express Congressional preservation of state authority; after that date it is based on absence of indications that Congress intended to "occupy the field" so completely as to preclude the possibility of concurrent state regulation. Even where there is concurrent jurisdiction, particular state regulation must, of course, give way to federal authority in the event of conflict such that "compliance with both federal and state regulations is a physical impossibility." *Florida*

Lime & Avocado Growers, Inc. v. *Paul*, 373 U.S. 132, 142-43 (1963).

The Preemption Doctrine[4]

The doctrine of preemption is based on Article VI of the Constitution, Clause 2, which elevates federal law above that of the states. It provides:

> This Constitution, and the Laws of the United States which shall be made in Pursuance thereof; and all Treaties made, or which shall be made, under the Authority of the United States, shall be the supreme Law of the Land; and the Judges in every State shall be bound thereby, any Thing in the Constitution or Laws of any State to the Contrary notwithstanding.

Conversely, however, since the Federal Government is one of limited powers, the Tenth Amendment to the Constitution preserves to the states all powers not specifically delegated to the United States nor expressly prohibited to the states. Accordingly, the starting point in any preemption analysis must be whether the Congressional enactment providing for federal regulation in a particular field has been undertaken pursuant to the powers delegated to the United States by the

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[4] The doctrine of preemption is firmly established in a long line of decisions of the Supreme Court. No attempt is made to cite them here. For simplicity, the overview presented here is freely paraphrased from the comprehensive summary of Supreme Court precedent set forth in *Northern States Power* v. *Minnesota*, 447 F.2d 1143 (8th Cir. 1971), aff'd mem. 405 U.S. 1035 (1972).

Constitution. Since the instant memorandum is prompted by confusion as to the proper interpretation of the Mill Tailings Act rather than its validity, this point need not be discussed further. In any event, it appears clear that the constitutional power to regulate interstate commerce provides adequate authority for federal regulation of uranium milling and mill tailings.

Having established that the Federal Government has the power to regulate in a given area, the inquiry must focus upon whether Congress has acted in a manner so as to exclude the states from asserting concurrent jurisdiction over the same subject matter. At the outset it should be understood that the existence of concurrent jurisdiction means that the states may regulate the very same subject as the Federal Government, i.e., the nonradiological hazards of uranium mill tailings. This may be by imposition of standards more demanding (but not inconsistent with) minimum federal standards or by regulation of aspects of the subject not addressed by the federal scheme. Concurrent jurisdiction can exist only if "both regulations can be enforced without impairing the federal superintendence of the field." *Florida Lime & Avocado Growers, Inc.* v. *Paul*, 373 U.S. 132, 142 (1963).

In cases where states have attempted to exercise concurrent jurisdiction the first question is whether the two regulatory schemes present irreconcilable conflict. As previously noted, state regulation must give way in the face of such conflict. In the instant situation, this inquiry too may be bypassed because the problem is one of anticipation – is there room for the

non-Agreement States[5] to assert regulatory authority over the non-radiological hazards of uranium mill tailings in a manner which does not conflict with the Mill Tailings Act and the NRC regulations promulgated under that Act.[6]

In the absence of inevitable collision between state and federal regulatory schemes. it must be determined whether Congress has manifested an intention to exclude the possibility of concurrent state regulation. The Mill Tailings Act does not contain language of "express preemption.[7] Of course, if language expressly

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[5] This paper focuses on the situation in non-Agreement States. In Agreement States no doubt remains as to the preemption/concurrent jurisdiction status. By virtue of the 1979 "remedial amendments" to the Mill Tailings Act it is clear that Agreement States have exclusive authority over all aspects of uranium mill tailings regulation until November 8, 1981 (though they must meet the requirements of section 274o. of the Atomic Energy Act as amended to the extent practicable" during this period). Thereafter, if these states have entered into amended agreements in accordance with the Mill Tailings Act, they will retain the exclusive authority (subject to the conditions of section 274o.). Should they elect not to assume the exclusive Agreement State authority over mill tailings, (i.e., not amend their agreements), they would stand in the same position as non-Agreement States insofar as regulation of mill tailings is concerned

[6] To date, the process of development of NRC regulations to implement the Mill Tailings Act has focused largely on the radiological hazards of mill tailings.

[7] An example of such preemptive language is found in section 106(d) of the Marine Protection, Research, and Sanctuaries Act of 1972, 33 U.S.C. § 461(d) (1976), which states:

after the effective date of this subchapter, no State shall adopt or enforce any rule or regulation relative to any activity regulated by this subchapter.

preserving state authority were contained in the Mill Tailings Act, the inquiry would also be at an end for there would clearly be no preemption. Whether or not such language is found or remains in the Atomic Energy Act and the Mill Tailings Act as both have been amended is a close question of the proper interpretation of those acts, including particularly § 204(h)(1) of the Mill Tailings Act as amended, which will be discussed below.

Assuming that Congress has neither expressly preserved nor expressly prohibited the exercise of state authority over a given subject matter, federal preemption may be implied in certain circumstances. Thus, the ultimate question to be answered in this memorandum is this: Does the Mill Tailings Act impliedly preempt non-Agreement State regulation of the non-radiological hazards of uranium mill tailings (a matter clearly subject to NRC regulation), or are these non-Agreement States free to exercise concurrent jurisdiction to the extent that their laws and regulations are consistent with those of the Federal Government?

Any discussion of the doctrine of implied preemption should be prefaced with the caveat that this is an extremely confusing area of law. In discussing the issue with regard to preemption in the nuclear field, one commentator stated:

> Although the general criteria for finding preemption are easily stated, the application to particular cases has been, to say the least, variable. Among other things, the decisions display inconsistent treatment of the degree

> of conflict necessary to support a finding of preemption and reliance on a broad range of presumptive factors – for example, the pervasiveness of the federal scheme of regulation, the dominance of the national interest in a particular field of regulation, and the possibility that that state law might produce a result inconsistent with the federal statute – as the basis for an inference that Congress intended to occupy a field to the exclusion of state authority. In one class of cases of particular interest here, involving state statutes designed to protect public health and safety, the Court has reiterated the now familiar maxim that a federal statute will not be deemed to preempt state action unless there is a direct conflict or a clearly mainfested congressional intent to that effect.[8]

Although the tests for implied preemption are summarized in any number of Supreme Court cases,[9] a clear and concise summary appears in the 8th Circuit's decision in Northern States Power, dealing with preemption in the nuclear field:

> Key factors in the determination of whether Congress has by implication, preempted a particular area so as to preclude state attempts

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[8] Murphy & La Pierre, nuclear "Moratorium" Legislation in the States and the Supremacy Clause: A Case Of Express Preemption 75-76 (Atomic Industrial Forum, Inc., November 1975) (footnotes omitted).

[9] *See, e.g.*, Rice v. Santa Fe Elevator Corp., 331 U.S. 218 (1947); Ray v. Atlantic Richfield Co., 435 U.S. 151 (1978).

> at dual regulation include, inter alia: (1) the aim and intent of Congress as revealed by the statute itself and its legislative history . . . ; (2) the pervasiveness of the federal regulatory scheme as authorized and directed by the legislation and as carried into effect by the administrative agency. . . . ; (3) the nature of the subject matter regulated and whether it is one which demands "exclusive federal regulation in order to achieve uniformity vital to national interests." . . . ; and ultimately (4) "whether, under the circumstances of [a] particular case [state] law stands as an obstacle to the accomplishment and execution of the full purposes and objectives of Congress."[10]

A finding of Federal preemption is the exception rather than the rule[11] and the exercise of Federal supremacy is not lightly to be presumed.[12] As a general rule, "conflicting law, absent repeal or exclusivity provisions, should be pre-empted . . . 'only to the extent necessary to protect the achievement of the aims of'" the federal law, since "the proper approach is to reconcile 'the operation of both statutory schemes with one another rather than holding [the state scheme] completely

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[10] Northern State. Power Co. v. Minnesota, 447 F.2d 1143, 1146 (8th Cir. 1971) (footnotes omitted).

[11] Cosmetic, Toiletry and Fragrance Assoc. v. Minnesota, 440 F.Supp. 1216, 1220 (D. Minn. 1977).

[12] Schwartz v. Texas, 344 U.S. 199, 202-203 (1952).

ousted.'"[13] This approach is especially appropriate where the State authority subject to preemption is an exercise of the "historic police powers of the State," such as those powers designed to protect the public health, safety, or welfare.[14]

In this connection, it must be noted that State police powers to regulate environmental hazards and protect water supplies have been given considerable deference in Federal law. Various Federal statutes have given express deference to State laws concerning water allocation.[15] The courts have also recognized that the States have a legitimate police power interest in environmental matters.[16] The States' inherent authorities concerning matters regarding water quality and supply is of special significance in the arid Western States where uranium milling occurs. Wyoming, for instance, views itself as the trustee of the State's waters for the people.[17] State authority of this nature will not be

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[13] Merrill, Lynch, Pierce, Fenner & Smith v. Ware, 414 U.S. 117, 127 (1973), *quoting* Silver v. New York City Stock Exchange, 373 U.S. 341 (1963).

[14] *See, e.g.*, Rice v. Santa Fe Elevator Corp., 331 U.S. 218 (1977); Kelly v. Washington, 302 U.S. 1, 10 (1937); Cloverleaf Butter Co. v. Patterson, 315 U.S. 148, 162 (1942); Florida Avocado Growers v. Paul, 373 U.S. 248, 259 (1963).

[15] *See, e.g.*, 43 U.S.C. §§ 383, 617 (1976).

[16] *See, e.g.*, Askew v. American Waterways Operators, 411 U.S. 325 (1973); Steuart Transportation Co. v. Allied Towing, 12 ERC 2035 (8th Cir. 1979); Exxon v. New York City, 372 F.Supp. 335 (S.D. N.Y. 1974).

[17] Hunziker v. Knowlton, 322 P.2d 141, 78 Wyo. 241, *reh. den.* 324 P.2d 266, 78 Wyo. 241.

preempted unless there is clear and manifest Congressional intent to do so.[18]

NRC/AEC Statutory Authority with respect to Uranium Mill Tailings

a. The Atomic Energy Act

Prior to enactment of the Mill Tailings Act, the Commission's authority over uranium milling was limited to licensing the source material produced in the milling process. Regulatory authority was asserted over the generation of tailings because it was an integral part of the milling process,[19] but no other authority to

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[18] De Canas v. Dica, 424 U.S. 351, 357 (1976); *see also*, Jones v. Rath Packing Co., 430 U.S. 519, 525 (1977); Rice v. Santa Fe Elevator Corp., 331 U.S. 218, 230 (1977). *See generally*, Catz & Leonard, *The Demise of the Implied Preemption Doctrine*, 4 HASTINGS CONST. L.Q. 295 (1977).

[19] The Commission relied upon subsections 161b. and i.(3) of the Atomic Energy Act of 1954 to impose conditions upon the uranium miller's license to receive and transfer source material. Specifically, these provisions authorize the Commission to:

> b. establish by rule, regulation, or order, such standards and instructions to govern the possession and use of special nuclear material, source material, and byproduct material as the Commission may deem necessary or desirable to promote the common defense and security or to protect health or to minimize danger to life or property.
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> f. prescribe such regulations or orders as it may deem necessary . . . (3) to govern any activity authorized pursuant to the Act, including standards and restrictions governing the design, location, and operation of facilities used in the conduct of

regulate uranium mill tailings was claimed by the Commission. In a memorandum dated December 7, 1960, the AEC's Acting General Counsel explored the issue of Commission jurisdiction over uranium mill tailings under the Atomic Energy Act of 1954. The thrust of this memorandum was that any potential health hazards posed by tailings would be attributable to the radium content – not the "unimportant"[20] quantities of uranium or thorium present in the tailings.[21] Since the Commission has no authority to regulate radium in the tailings, the net result was the [sic] there was no AEC regulation of uranium mill tailings.

As the NRC became increasingly concerned with the potential hazards of uranium milling and mill tailings, however, it began to take a more agressive role in regulating these matters[22] in implementation of its

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such activity, in order to protect health and to minimize danger to life or property.

[20] Section 62 of the Atomic Energy Act of 1954 provides that " . . . licenses shall not be required for quantities of source material which, in the opinion of the Commission, are unimportant."

[21] This memorandum (and a related one) were adopted as the position of a subsequent AEC general counsel in 1971, and are reprinted in *Use of Uranium Mill Tailings for Construction Purposes; Hearings Before the Subcomm. on Raw Materials of the Joint Comm. on Atomic Energy*, 92d Cong., 1st Sess. 19 *et seq.* (1971).

[22] *See e.g.*, U.S. NUCLEAR REGULATORY COMMISSION, FUEL PROCESSING AND FABRICATION BRANCH, BRANCH POSITION ON URANIUM MILL TAILINGS MANAGEMENT (May 13, 1977); U.S. NUCLEAR REGULATORY COMMISSION, ASSESSMENT OF ENVIRONMENTAL IMPACTS OF URANIUM MILLS IN AGREEMENT STATES, 43 Fed. Reg. 17,879 (April 26, 1978).

responsibilities under the National Environmental Policy Act of 1969. At the time the Mill Tailings Act was passed, a cognizant congressional committee noted:

> . . . [T]he NRC now regulates these tailings at active mills indirectly through its licensing of source material milling under the Atomic Energy Act of 1954, largely as a result of the enactment of the National Environmental Policy Act of 1969.[23]

Once the active milling operations ceased and the underlying Commission source material license was terminated, there was "no longer a 'clear legal basis for further Commission regulatory control of the mill tailings', according to Dr. Hendrie", Chairman of the NRC.[24]

b. The Mill Tailings Act

The Mill Tailings Act was intended to fill this regulatory gap.[25] Title II strengthens both the NRC and the Agreement State regulatory requirements regarding uranium milling and mill tailings. This title of the Mill

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See also, memorandum from Howard K. Shapar, Assistant General Counsel, Licensing and Regulation to John A. McBride, Director, Division of Materials Licensing, entitled "Commission's Regulatory Authority over Uranium Mill Tailings" (September 22, 1965).

[23] H.R. REP. NO. 95-1480, Pt. 2, 95th Cong., 2d Sess. 28 (1978).

[24] *Id.*, at 29.

[25] *See* H.R. REP. NO. 95-1480, Pt. I, 95th Cong. Sess. 12 (1978).

Tailings Act amends the Atomic Energy Act of 1954 to provide direct NRC authority over uranium mill tailings and wastes, now defined as "byproduct material" under section 11e.(2) of the Atomic Energy Act.[26] Other salient provisions of title II include a scheme for Federal or State ownership of tailings disposal sites once milling activities cease, authority for the NRC to require bonding or other financial surety to ensure stabilization and reclamation of tailings and milling sites by its milling licensees, and the concept of national minimum standards for tailings management and disposal to be established by NRC and EPA and to apply in both Agreement and non-Agreement States.

Section 201 of the Mill Tailings Act amends section 11e. of the Atomic Energy Act of 1954 by adding a new category of byproduct material: "the tailings or wastes produced by the extraction or concentration of uranium or thorium primarily for its source material content."[27] In essence, this expanded definition operates to place uranium mill tailings and wastes into the existing regulatory scheme in the Atomic Energy Act of 1954. Section 81 of that Act, as amended, provides that –

> [n]o person may transfer or receive in interstate commerce, manufacture, produce, transfer, acquire, own, possess, import, or export any byproduct material, except to the extent authorized by this section [authorizing

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[26] 42 U.S.C.A. § 2014(e)(2) (1979).

[27] *Id.*

> Commission licenses or exemptions], section 82 [governing exports], and section 84 [covering milling and mill tailings].[28]

The definition of section 11e.(2) byproduct material focuses on "tailings or wastes produced by the extraction or concentration of uranium, or thorium from an ore processed *primarily for its source material content*"[29] so as to exclude from NRC regulation mill tailings that contain uranium produced as a side stream of an operation primarily intended to extract a mineral other than uranium.[30]

The scope of NRC's regulatory responsibility over section 11e.(2) byproduct material is pervasive, as indicated by reference to the operative provisions of the Mill Tailings Act. Section 205 of that Act adds a new section 84 to the Atomic Energy Act of 1954, outlining "Authorities of Commission Respecting Certain Byproduct Material." Under this section, the Commission must insure that the management of section 11e(2) byproduct material is "carried out in such a manner as . . . the Commission deems appropriate to protect the *public health and safety and the environment from radiological and nonradiological hazards* associated with

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[28] 42 U.S.C.A. § 2111 (1979).

[29] 42 U.S.C.A. § 2014(e)(2) (1979) (emphasis added).

[30] As discussed in the accompanying memorandum regarding in-situ extraction of uranium, the Commission's regulations further delimit the definition of section 11e(2) byproduct material to include discrete surface wastes resulting from uranium solution extraction processes, but to exclude underground ore bodies depleted by such solution extraction operations. 10 CFR § 40.4(a-1).

the processing and with the possession and transfer of such material," (emphasis added) and conforms to the general standards for tailings management prescribed by the EPA and the Commission.[31]

Significantly, this marks the first time the Atomic Energy Act of 1954, as amended, gives the Commission specific authority over nonradiological and environmental matters.[32] Prior to enactment of the Mill Tailings Act, NRC authority under the Atomic Energy Act of 1954 had been limited to radiological, public health and safety, common defense and security, and antitrust matters, although the agency was, of course, required to consider nonradiological issues pursuant to the National Environmental Policy Act of 1969.[33] The proposed regulations implementing the Mill Tailings Act do not at this time focus heavily on nonradiological environmental concerns. The regulations rather emphasize traditional Commission concerns, such as radon emanation from the tailings or wastes, but do to a lesser extent address certain newer areas of interest, such as seepage of toxic materials into groundwater.[34]

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[31] 42 U.S.C.A. § 2022(d) (1979).

[32] Prior to the enactment of NEPA, it was held that the AEC lacked statutory authority under the Atomic Energy Act of 1954 to deny or condition licenses on nonradiological environmental grounds. New Hampshire v. AEC, 406 F.2d 120 (1st Cir. 1969), *cert. den.* 395 U.S. 962 (1969).

[33] Calvert Cliffs' Coordinating Committee v. AEC, 449 F.2d 1109 (D.C. Cir.) *cert. den.* 404 U.S. 942 (1971).

[34] 44 Fed. Reg. 50,021 (1979), proposing a new Appendix A to 10 C.F.R. Part 40.

It should be noted that the role of other agencies in the regulation of the environmental hazards associated with uranium milling and mill tailings is not affected. Section 275e. of the Atomic Energy Act of 1954 (added by the Mill Tailings Act) provides:

> Nothing in this Act applicable to byproduct material, as defined in section 11e.(2) of this Act, shall affect the authority of the Administrator under the Clean Air Act of 1970, as amended, or the Federal Water Pollution Control Act, as amended.

Under these acts the EPA Administrator is empowered to authorize state implementation and enforcement of certain provisions of these acts. There is no indication of intent in the legislative history of the Mill Tailings Act to take away this authority of the Administrator.[35]

Thus, EPA, and the states which administer these acts, retain permitting and regulatory authority over air or water pollutants emitted by uranium milling operations or tailings to the same extent as before passage of the Mill Tailings Act.

The NRC and the EPA are to set national Federal standards applicable in both Agreement States and non-Agreement States.[36] The legislative history of the Act indicates that the intent is to insure that –

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[35] Indeed, the ultimate committee report stresses that the Mill Tailings Act is not to affect the applicability of any of the environmental laws. H. R. REP. NO. 95-1480, Pt. 2, 95th Cong., 2d Sess. 46 (1978).

[36] 42 U.S.C.A. §§2114, 2022, 2021(o) (1979).

> . . . mills located in a non-Agreement State are not subject to different requirements than their competitors which are located in an Agreement State.[37]

To this end, the Agreement States must also, when issuing uranium milling or mill tailings licenses or regulations, follow procedures comparable to those of the NRC.[38] Similarly, Agreement State financial surety requirements applied to milling licensees must be sufficient to ensure compliance with those standards established by the Commission.[39]

Another, possibly more significant, indicator of the NRC's predominance in the area of uranium milling and mill tailing regulation is the NRC's retention of authority over certain aspects of long term tailings management in Agreement States. This retention of authority over materials under Agreement State regulation is a marked departure from the Agreement State program as originally enacted, which envisaged a clear separation of Commission and Agreement

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[37] H.R. REP. NO. 95-1480, Pt. 2, 95th Cong., 2d Sess. 45 (1978).

[38] 42 U.S.C.A. §§ 2021(o)(1-3) (1979). The procedures include steps to enhance public participation and an environmental review. Under 42 U.S.C.A. § 2021(j) (1979), the NRC must undertake periodic reviews to ensure that the Agreement States are complying with these requirements, and a State's failure to comply may mean termination or suspension of all or part of its agreement.

[39] 42 U.S.C.A. §2201(x) (1979).

State authority.[40] Under sections 83c. and 275c. of the Atomic Energy Act of 1954, as amended by the Mill Tailings Act, before any uranium milling license (including an Agreement State license) may be terminated, the NRC must have first made a determination that all applicable requirements pertaining to tailings stabilization and decontamination have been met.[41] Moreover, under sections 83a. and b., the following authority is reserved to the Commission after November 8, 1981: (1) the authority to establish such terms and conditions as the Commission determines necessary to assure that the licensee complies with decontamination, decommissioning, and reclamation standards the Commission may establish;[42] (2) the authority to require transfer of title of the tailings and their disposal site to the Federal or, at the option of the State, State government;[43] (3) the authority to permit use of surface or subsurface estates, or both, of land transferred to the United States or a State;[44] (4) the authority to

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[40] According to the legislative history of the 1959 amendments to the Atomic Energy Act of 1954 establishing the Agreement State program,

> It is not intended to leave any room for the exercise of dual or concurrent jurisdiction by States to control radiation hazards by regulating byproduct, source, or special nuclear materials. The intent is to have the material regulated either by the Commission, or by the State and local government, but not by both. S. REP. No. 870, 86th Cong., 1st Sess. 9 (1959).

[41] 42 U.S.C.A. §§ 2113(c), 2021(c) (1979).

[42] 42 U.S.C.A. § 2113(a)(1) (1979).

[43] 42 U.S.C.A. § 2113(b)(1) (1979).

[44] 42 U.S.C.A. §§ 2113(b)(1,7) (1979).

require transfer of tailings and their disposal site connected with a mill that was in operation before the effective date of the land transfer requirements of section 83 of the Atomic Energy Act of 1954;[45] (5) the authority to require the Federal agency or State having custody of the tailings and their disposal site to under take monitoring, maintenance, and emergency measures as the Commission may deem necessary;[46] and (6) the authority to enter into arrangements to ensure that tailings on Indian lands are properly monitored and maintained.[47]

What, if any, authority to regulate the non-radiological hazards of uranium mill tailings has been left to non-Agreement States

a. The situation before November 8, 1981

The foregoing discussion makes clear that Congress intended the Federal Government to assume a pervasive and preeminent role with regard to the hazards of uranium mill tailing [sic] – both radiological and non-radiological. The question of implied preemption then turns upon whether this role established for the Federal Government so completely "occupies the field"[48] as

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[45] 42 U.S.C.A. § 2113(b)(4) (1979).

[46] 42 U.S.C.A. § 2113(b)(5) (1979).

[47] 42 U.S.C.A. § 2113(b)(8) (1979).

[48] The implied preemption standard of "occupancy of the field" (see, e.g., Flordia [sic] Lime and Avocado Growers, Inc. v. Paul, 373 U.S. 132, 135 (1963)) is measured by the more detailed factors set forth in cases such as Northern States Power v. Minnesota, 447 F.2d 1143 (8th Cir. 1971). See pp. 3-8, *supra*.

to leave no room for concurrent non-Agreement State regulation. Before attempting to reach a conclusion on this, we will first examine the available indicia as to whether Congress intended to preserve or preclude non-agreement state authority. Because one of the key (and most confusing) factors – section 201(h)(1) of the Mill Tailings Act as amended – applies only until November 8, 1981, the situation must be examined separately for the periods before and after that date.

It should be noted at the outset that the authors of the Mill Tailings Act were generally careful to identify Agreement States when they wished to distinguish between Agreement and non-Agreement States. For example, section 275d. of the Atomic Energy Act of 1954[49] as added by the Mill Tailings Act, refers to "States exercising authority pursuant to section 274b.(2) of this Act." By implication, the failure to identify a provision as applying only to Agreement States means that reference to "a State" or "any State" means just what it says – either an Agreement or a non-Agreement State.[50]

It appears that certain authorities *are* available to any State under the Mill Tailings Act. As described above, limitations on exclusive NRC authority leave room for State regulation. The most salient of these limitations is the definition of byproduct material in section 11e.(2), which leaves to the States the regulation of

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[49] 42 U.S.C.A. § 2022(d) (1979).

[50] *See* 2A Sutherland, STATUTORY CONSTRUCTION, § 47.23 (4th ed., C.D. Sands 1975).

tailings or wastes produced by the extraction or concentration of uranium or thorium from ore *not* processed primarily for its source material content, and allows the State authority over below-ground (e.g., mining) aspects of in situ extraction. Also, by virtue of section 275e. of the Atomic Energy Act of 1954,[51] as added by the Mill Tailings Act, States may continue to exercise whatever authority they have to administer certain provisions of the Clean Air Act or the Federal Water Pollution Control Act.

Other authorities appear to be generally available to the States under the Mill Tailings Act. Under section 83(b)(1) of the Atomic Energy Act of 1954,[52] as added by the Mill Tailings Act, a State – apparently Agreement or non-Agreement – may opt to take custody of tailings and their disposal site. Similarly, under section 161x. of the Atomic Energy Act of 1954,[53] as added by the Mill Tailings Act, the NRC must, when imposing financial surety requirements, take into consideration "other financial arrangements which are required by other Federal agencies or *State agencies and/or other local governing bodies*. . . ." (Emphasis added.)

The remainder of the statutory provisions that might bear upon non-Agreement State authority are extremely confusing, and to a certain extent, self-contradictory. Two of them, relied upon in the opinion of the Wyoming Attorney General as support for his opinion

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[51] 42 U.S.C.A. § 2202(e) (1979).

[52] 42 U.S.C.A. § 2114(b)(1) (1979).

[53] 42 U.S.C.A. § 2201(x) (1979) (emphasis added).

that non-Agreement States have concurrent jurisdiction with the NRC over non-radiological hazards of uranium mill tailings until November 3, 1981, may be discussed together at the outset – section 274k. of the Atomic Energy Act of 1954 and section 204(g) of the Mill Tailings Act. (It will be recalled that section 274 of the Atomic Energy Act authorizes and establishes the Agreement State program and that section 204 of the Mill Tailings Act amends section 274 to provide for Agreement State regulation of mill tailings).

Section 274k provides that:

> Nothing *in this section* shall be construed to affect the authority of any State or local agency to regulate activities for purposes other than protection against radiation hazards. (Emphasis added.)

Section 204(g) provides that:

> Nothing in any amendment made *by this section* shall preclude any State from exercising any other authority as permitted under the Atomic Energy Act of 1954 respecting any by-product material, as defined in section 11e.(2) of the Atomic Energy Act of 1954. (Emphasis added.)

These two provisions operate to preserve State authority *only* as against other provisions in sections 204 or 274, respectively, which apply to the Agreement State program – *not* to any other NRC authority over milling or mill tailings. Section 274k. of the Atomic Energy Act of 1954 and section 204(g) of the Mill Tailings

Act merely prevent anything *in section 274, as amended – i.e.*, the Agreement State program – from affecting State authority over non-radiological hazards.[54] Sections 84 and 275 of the Atomic Energy Act of 1954 (added by §§ 202(a) and 206a, respectively, of the Mill Tailings Act) give NRC and EPA clear immediate authority over nonradiological (as well as radiological) matters, and are not limited by any reservation of prior State authority in section 274k. of the Atomic Energy Act of 1954 or section 204(g) of the Mill Tailings Act.

Thus neither section 274k. nor section 204(g) operates to preserve non-Agreement State authority over the non-radiological hazards of uranium mill tailings.

Most confusing is section 204(h)(1) of the Mill Tailings Act, which purports to preserve prior State authority

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[54] The Opinion of the Wyoming Attorney General fails to point out that section 274k. of the Atomic Energy Act of 1954 and section 204(g) of the Mill Tailings Act apply only to the Agreement State provisions of section 274 and amendments thereto, making them of no value in reserving State authority against sections 84 and 275 of the Atomic Energy Act of 1954:

> [Congress'] failure to repeal Section 2021(k) of the AEA – the judicial touchstone for decisions recognizing state regulatory authority over non-radiological hazards – or to appeal [sic] or amend Section 204(g) of UMTRCA – which preserves to the states the authority over tailings permitted them under the AEA prior to amendments to the cooperative agreement section thereof – leaves non-agreement states in essentially the same position they were in with respect to tailings prior to 1978. (Opinion at 9.)

It also appears to erroneously assume that sections 84 and 275 do not take effect until 1981. (Opinion at 6.)

respecting section 11e.(2) byproduct material for the three-year period before the Act becomes fully effective. As originally enacted, section 204(h)(1) stated:

> On or before the date three years after the date of enactment of this Act, notwithstanding any amendment made by this title, any State may exercise any authority under State law respecting byproduct material, as defined in section 11e.(2) of the Atomic Energy Act of 1954, in the same manner, and to the same extent, as permitted before the enactment of this Act.

On its face, this provision would have preserved *any* State authority under State law regarding tailings for the three-year period before the Mill Tailings Act became fully effective in 1981. Read literally, this would include authority over radioactive and nonradioactive hazards of mill tailings. This was the understanding of the Commission, for when it suggested remedial amendments to eliminate concurrent NRC-Agreement State jurisdiction of uranium mill tailings (but not change the situation in non-Agreement States), its section-by-section analysis explained:

> In non-Agreement States, the NRC would have immediate authority to implement the regulatory program in Title II. Although section 204(h)(1) preserves prior State authority for three years, in case of conflict between

> Federal and State law, the Federal would prevail.[55]

Although the legislation as originally drafted by the Commission was introduced by Senator Domenici and passed by the Senate,[56] it was subsequently amended by Representative Udall to ensure that the new requirements of the Mill Tailings Act pertaining to Agreement State regulation and licensing of uranium milling and mill tailings would be applied to the maximum extent practicable during the three-year period before the Act becomes fully effective.[57] Section 204(h)(1) as amended reads in part as follows:

> During the three-year period beginning on the date of the enactment of this Act, notwithstanding any other provision of this title, *any State may exercise any authority under State law (including authority exercised pursuant to an agreement entered into pursuant to section 274 of the Atomic Energy Act of 1954)* respecting (A) byproduct material, as defined in section 11e.(2) of the Atomic Energy Act of 1954, or (B) any activity which results in the production of byproduct material as so defined, in the same manner and to the same extent as permitted before the date of enactment of this Act, *except that such State authority shall be exercised in a manner which, to the extent*

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[55] Cong. Rec. S15,006 (Oct. 24, 1979) (statement of Sen. Domenici incorporating NRC's section-by-section analysis).

[56] *Id.*

[57] Cong. Rec. H 9772 (Oct. 26, 1979) (statement of Rep. Udall).

> *practicable is consistent with the requirements of section 274o. of the Atomic Energy Act of 1954* (as added by section 204(e) of this Act). . . .[58]

Obviously the drafters of the Udall amendments to the remedial amendments were not thinking in terms of preserving non-Agreement State authority over mill tailings: they were intent upon making the Agreement States follow the new requirements of the Mill Tailings Act to the maximum extent practicable.[59]

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[58] Pub. L. No. 96-106, § 22(b), 93 Stat. 799 (1979) (emphasis added).

[59] In explaining his amendment, which also amended section 204(e) to provide that section 274o. "shall apply only to the maximum extent practicable during the three year period beginning on the date of enactment of this Act," Mr. Udall stated:

> "My amendment changes the Senate Amendment to provide that specified effective standards and procedures in the act would be effective immediately to the maximum extent practicable. Further the Nuclear Regulatory Commission is declared to retain authority to assure that *agreement States* in exercizing [sic] their licensing activities implement the requirements to the maximum extent practicable. (Empahsis [sic] added) Cong. Rec. H 9772 (October 26, 1979).

Upon return of the measure to the Senate, Senator Domenici accepted the Udall amendment and indicated his understanding that the new language was to apply to the Agreement States:

> Mr. President, I am willing to accept this modification to my amendment. However, because this is a new addition to the statutory language, some further explanation may be in order. First, as the legislative history to the Mill Tailings Act recognized, there may be several reasons why it is not practicable for a particular Agreement State to meet one or more of the new requirements

The result is a provision which does not admit of any reading which gives full effect to all of the language used. Three possible interpretations, each strained, appear possible.

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of the act within the 3-year interim period. For example, action by the State legislature may be required to give the State regulatory agencies authority to meet certain of the requirements, or action of the State legislature may be needed to provide all the necessary funding to meet the new requirements. Because some State legislatures meet infrequently, the time needed to accomplish any necessary changes may vary considerably. Also, after NRC issues any new substantive standards for the control of mill tailings, a period of time may be required for the Agreement States to incorporate the new standards into thier [sic] ongoing regulatory programs. These are just a few examples of factors which could make it not practicable for an Agreement State to meet one or more of the new requirements during the 3-year interim period.

With regard to NRC's role during the interim period, this amendment would not give the Commission any new authority over individual State licensing determinations. Thus, the Commission would not have the authority to issue, deny or revoke licenses in the Agreement States. Rather, NRC's role during the interim period will be to assist the Agreement States in upgrading their regulatory programs to meet the new requirements. One approach which has already been used effectively in this process is the offer of NRC technical assistance to the State on a consultant basis. Another useful tool is the grant program established by the Mill Tailings Act. The amendment provides an added directive to the Commission to work in cooperation with the Agreement States to improve the effectiveness of their regulatory efforts as soon as possible.

Cong. Rec. S. 14356 (October 29, 1979).

First, the provision could be construed as applying to Agreement States only. While this would give effect to the intention of the language added by the remedial amendments (see footnote 59, *supra*) it would require reading "any State" to mean "Agreement State," and would implicitly repeal the earlier preservation, insofar as non-Agreement States are concerned, of previously existing authority over the non-radiological hazards of tailings. The sparse legislative history contains no indication that the Commission in proposing the remedial amendments or the Congress in acting upon them intended this latter result. Moreover, as previously noted, Congress was generally careful to indicate clearly when references to Agreement States were intended.

Second, the provision could be read, in its entirety, as applying to all states. The introductory reference to "any State" would support such a reading, but the necessary consequence, if the remainder of the provision is read literally, would be that non-Agreement States would be bound to apply "to the extent practicable" other provisions which, when enacted, were intended to apply only to Agreement States. Moreover in non-Agreement States this obligation would endure only until November 8, 1981, where as in Agreement States the requirements would become ever more stringent after that date. The legislative history provides no support for such a result, and no sound legislative purpose for such a scheme is apparent.

The third alternative is to read the general preservation of authority in section 204(h)(1) as applying to any

state and limiting the applicability of the provision for compliance with the requirements of section 274o. "to the extent practicable" to Agreement States. In effect, this requires the insertion of a phrase into the language added by Representative Udall so that it reads along the following lines:

> except that such State authority, *when exercised by an Agreement State*, shall be exercised in a manner which. . . .

Such an approach to the interpretation of section 204(h)(1) would (a), maintain the original reservation of authority to all states, as originally intended,[60] (b) eliminate concurrent jurisdiction in Agreement States, as was clearly intended,[61] and impose interim requirements only upon the Agreement States, which is all that Congress appears to have actually contemplated.[62] The problem with this approach, obviously, is that it requires reading into the statute words which are not there.

The leading commentator on statutory construction observes that "words may be inserted in or added to a statute where that is necessary in order to effectuate the legislative intent or manifested statutory meaning"[63] but notes that the Federal Courts (in contrast to a great many State courts) deny themselves that

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[60] See n. 52, *supra*, and accompanying text.

[61] *Id.*

[62] See n. 55, supra, and accompanying text.

[63] 2 A Sutherland, STATUTORY CONSTRUCTION, § 47.38 (4th ed., C. D. Sands 1973).

power.[64] The Supreme Court has said "Our problem is to construe what Congress has written. After all, Congress expresses its purpose in words. It is for us to ascertain – neither to add nor to subtract, neither to delete nor to distort." *62 Cases of Jam v. United States*, 340 U.S. 593, 596 (1951). This pronouncement was made, however, in a case where the Court was asked to reach a result which would "distort the ordinary meaning of the statute." *Id.* at 600.

The Situation Before November 8, 1981 – Conclusion

Each of the three possible constructions of section 204(h)(1) present problems. None will give full effect to all the parts of the statute; only the third option will give full effect to the available indicia of legislative intent. Though the question is extremely close, we believe that the better legal view is to read the section as applying – as it says – to any state, thus expressly preserving to non-Agreement States until November 8, 1981, authority over the non-radiological hazards of uranium mill tailings. The attendant difficulty of implementing the unintended and illogical requirement that non-Agreement States implement the provisions of section 274o. "to the extent practicable" can be obviated by adopting the third option presented, or by exercising discretion in interpreting and enforcing the applicability of that proviso to the non-Agreement States. In light of the manifest legislative intent of the remedial amendments, it would not appear to be an

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[64] *Id.* at n. 4.

abuse of discretion for the Commission to decline to enforce the use of 274o. procedures by non-Agreement States during the short remaining life of section 204(h)(1) (*i.e.*, to find that it is not practicable for non-Agreement States to comply with these precedures [sic] until November 8, 1981).

b. The situation after November 8, 1981

As we have seen, there is no provision in either the Atomic Energy Act of 1954 as amended or the Mill Tailings Act as amended which indicates an express Congressional intent to preserve or prohibit non-Agreement state authority over the non-radiological hazards of uranium mill tailings after November 8, 1981, the date on which section 204(h)(1) ceases to have effect. Thus the question of concurrent jurisdiction versus implied preemption after that date turns upon whether Congress has "occupied the field." Like the other questions examined in this paper, it is a close one.

The Case for total preemption

The Mill Tailings Act creates a comprehensive Federal scheme that is designed to establish a uniform national program for regulating the radiological and non-radiological hazards of uranium mill tailings regulation. This intent is woven through the overall regulatory scheme as described in detail at pages 12-18, *supra*. For example, even in Agreement States, (which previously were given all the Commission's authority

over materials transferred pursuant to section 274b. of the Atomic Energy Act of 1954), the NRC is given a lead role in standard-setting and direct authority concerning long term tailings management. Further evidence of the pervasive nature of the Commission's authority over all of the hazards associated with uranium milling and mill tailings may be found in the legislative history of the Mill Tailings Act which makes numerous references to the general intent to establish a uniform Federal regulatory regime covering all aspects of uranium mill tailings management.[65]

Indeed, the statutory provisions describing the role of the NRC in the regulatory scheme for uranium mill tailings are far more detailed than those for nuclear reactors.[66] Using the tests set forth in *Northern States Power*, it is not difficult to argue that (1) in enacting the Mill Tailings Act, the Congress intended to establish a Federal scheme to regulate all hazards associated with uranium mill tailings.; (2) this scheme, when incorporated into the Atomic Energy Act of 1954, is

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[65] For example:

> This section amends section 274 of the Atomic Energy Act to provide for adherence by Agreement States to minimum *Federal standards* for uranium mill tailings control, stabilization, and disposal. H.R. Rep. No. 95-1480, Pt. 2, 95th Cong., 2d Sess. 44 (1978). (emphasis added.)

[66] *Compare* section 83 and 84 of the Atomic Energy Act of 1954, 42 U.S.C.A. § 2113, 2114 (1979) governing uranium mill tailings management *with* sections 102 and 103 of the Atomic Energy Act of 1954, 42 U.S.C.A. § 2132, 2133 (1976) governing the licensing of nuclear reactors.

sufficiently pervasive to oust State regulation; (3) the subject matter – the long term hazards associated with the nuclear fuel cycle – is one that demands exclusive Federal regulation in order to achieve uniformity vital to national interests; and (4) that State law (which if left to reign freely would inevitably induce local variations in the regulation of uranium mill tailings) does stand as an obstacle to the purposes and objectives of Congress.

Moreover, there is no completely convincing reason to distinguish between radiological and nonradiological hazards for reasons of preemption. The NRC's new responsibilities under the Mill Tailings Act regarding environmental and nonradioactive hazards of uranium milling operations and mill tailings are made an integral part of the Atomic Energy Act's comprehensive plan for Federal preeminence in nuclear regulation. Using the same logic as was employed in *Northern States Power*, one could conclude that the fact that the Congress expressly gave Agreement States authorities over environmental and nonradiological hazards associated with mill tailing[67] must mean that these

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[67] Section 274o.(3)(C) of the Atomic Energy Act of 1954, 42 U.S.C.A. § 2021(o)(3)(C) states that the Agreement States, when licensing uranium milling operations or mill tailings, shall:

> require for each license which has a significant impact on the human environment a written analysis . . . of the impact of such license, including any activities conducted pursuant thereto, on the environment, which analysis shall include –

authorities are no longer generally available under state police powers.[68] In short, this argument holds that allowing non-Agreement States to exercise concurrent jurisdiction over nonradiological hazards of uranium mill tailings would be tantamount to allowing the non-Agreement States the privileges in this regard allowed under the Agreement State program without requiring an agreement and all the conditions and safeguards that attach thereto.

Thus, this argument goes, it is clear under the Mill Tailings Act that there is a manifested congressional intent to preempt all residual State police power authority over uranium mill tailings – radiological and nonradiological. This intent is sufficient to overcome the presumption against preemption of historic State

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(i) an assessment of the radiological and *nonradiological impacts* to the public health of the activities to be conducted pursuant to such license;

(ii) an assessment of any *impact on any waterway and ground w*[illegible] resulting from such activities;

(iii) consideration of alternatives, including alternative sites and *engineering methods*, to the activities to be conducted pursuant to such license; and

(iv) consideration of the long-term impacts, including decommissioning, decontamination, and reclamation impacts, associated with activities to be conducted pursuant to such license, including the management of any byproduct material, as defined in section 11e.(2). . . . (emphasis added.)

[68] The additional buttressing argument can be made that by delineating certain responsibilities the states were to retain, Congress had focused upon the subject and decided that authority not mentioned was not to be retained.

police powers.[69] As was stated in the *United States v. City of New York* case, where such State law stands as an obstacle to the accomplishment of the full purposes and objectives of Congress, "the local legislation is not insulated by its wisdom or nobility; for the purposes of the Supremacy Clause, the merit of the local enactment is irrelevant."[70]

The case for concurrent jurisdiction

A convincing argument can also be made, however, that while there is Federal preemption of State authority over radiological hazards associated with uranium mill tailings, there is concurrent NRC-State authority over the nonradiological hazards (recognizing that, in the event of conflict, the NRC authority is paramount). This argument for NRC preemption of State regulatory authority concerning radiological matters, with concurrent State-NRC jurisdiction over nonradiological and environmental matters, assumes that radiological hazards of uranium milling and mill tailings should be treated differently than nonradiological hazards for purposes of preemption.

Traditionally, only radiological matters have been held preempted in the case law regarding nuclear preemption. The scheme of the Atomic Energy Act of 1954 indicates that Congressional intent regarding preservation of State authority over nonradiological

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[69] Ray v. Atlantic Richfield Co., 435 U.S. 151 (1978).

[70] 463 F.Supp. at 608, *citing* Franklin National Bank v. New York, 347 U.S. 373, 378-79 (1954).

matters, as evidenced by section 274k., although perhaps limited by the grant of Federal authority in this area by the Mill Tailings Act, remains vital in terms of permitting concurrent State-NRC jurisdiction over such nonradiological hazards.[71] Further, the legislative history of the Mill Tailings Act indicates that radiological hazards were of primary concern.[72] At one point, a committee report describing the Mill Tailings Act specifically segregated NRC's nonradiological duties, as follows:

> With respect to *nonradiological* matters, the NRC, through its environmental review under the NEPA mandate, would impose controls consistent with those imposed by EPA on similar materials contained in other solid wastes subject to EPA authority.[73]

In addition, it can be argued the Mill Tailings Act does not provide a truly comprehensive Federal scheme regarding nonradiological matters. More importantly, as discussed at pages 19-20 *supra*, certain authorities are available to any state under the Mill Tailings Act. The definition of section 11e.(2) byproduct material is somewhat vague (as indicated by NRC's need to clarify

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[71] 42 U.S.C. § 2021(k) (1976). As mentioned above, however, section 274k. preserves States' authority over nonradiological matters *only* as against other provisions regarding the Agreement State program – *not* as against NRC authorities over mill tailings.

[72] H.R. REP. NO. 95-1840, Pt. 1, 95th Cong., 2nd Sess., 11 (1978). *See* note 17, *supra*. Indeed, it is worth noting that the title of the Act is the Uranium Mill Tailings *Radiation* Control Act of 1978. (Emphasis added.)

[73] *Id.* at 16 (emphasis added).

it in the definition in 10 CFR 40.4(a-1)). Further, the definition excludes uranium mill tailings generated from a side stream of milling not done primarily to obtain source material. Thus, the state police power does cover some mill tailings identical to those described in section 11e(2) but for their origin.

Other authorities reserved to the states are their continued exercise of authority to administer certain provisions of the Clean Air Act and the Federal Water Pollution Control Act, and the authority under section 83(b)(1) of the Atomic Energy Act of 1954, as added by the Mill Tailings Act, to opt to take custody of tailings and their disposal site. It is equally clear that under section 161x. of the Atomic Energy Act of 1954, as added by the Mill Tailings Act, the NRC must, when imposing financial surety arrangements, consider other financial arrangements which are required by state and local governments.

Thus it seems that the various gaps in the otherwise pervasive Federal scheme covering the nonradiological hazards connected with uranium milling and mill tailings cause the argument for preemption in this area to fail. As discussed in depth earlier, historic state police powers, such as those at stake here, will not be found to be preempted absent a showing of clear congressional intent to this effect. It can readily be argued in the instant case, that the extent of federal authority over nonradiological hazards of uranium milling and mill tailings is insufficient to overcome the presumption against preemption, and that for this reason, the

NRC and the non-Agreement States would be able to exercise concurrent jurisdiction in this area.

The situation after November 8,1981 – Conclusion

The arguments for and against a conclusion that the Congress has so "occupied the field" as to preempt the possibility of any non-Agreement State regulation of the nonradiological hazards of uranium mill tailings are fairly evenly in balance. Both legal and practical considerations, however, lead us to the conclusion that the better view is that Congress has not preempted the field, and that the states may therefore exercise concurrent jurisdiction. First is the practical consideration that the authority given to the NRC (and the EPA) is extremely broad, and that any exercise of it will prevail over any conflicting state regulatory action. In other words, the federal regulatory agencies have the power to ensure that state regulation in this area cannot serve to frustrate the Congressional purpose. Second, while the Mill Tailings Act provides for federal regulatory authority over the nonradiological hazards of uranium mill tailings, the thrust of the legislative history and the NRC implementing regulations is directed toward radiological hazards. As a legal matter, this undercuts the argument that the field of regulation of nonradiological hazards has been so fully occupied as to leave no room for the states.

Applying the four tests enumerated in *Northern States Power*, *supra*, (and the other preemption cases), we find the more persuasive view to be that (1) the Mill

Tailings Act and its legislative history do not provide clear evidence of Congressional intent to oust non-Agreement States of all authority over the nonradiological hazards of uranium mill tailings, (2) the federal regulatory scheme, while broad, is not all-encompassing, (3) the subject of uranium mill tailings regulation does not demand "exclusive federal regulation in order to achieve uniformity vital to national interests," and (4) concurrent non-Agreement State regulation of the nonradiological hazards of uranium mill tailings need not "stand as an obstacle to the accomplishment and execution of the full purposes and objectives of Congress."

Summary of Conclusions

We believe the better legal view to be that non-Agreement States have concurrent jurisdiction with the NRC to regulate the nonradiological hazards of uranium mill tailings both before and after November 8, 1981, so long as any such state regulation is not in conflict with that of NRC. This is based upon the absence, in our view, of sufficient indication of Congressional intent to so fully occupy the field as to overcome the strong presumption against implied repeal of state police powers. Before November 8, 1981, this conclusion is buttressed by the apparent Congressional intent in section 204(h)(1) of the Mill Tailings Act to preserve previously existing Agreement State authority over the nonradiological hazards of uranium mill tailings.

ASSESSMENT OF RISK FROM URANIUM MINING IN VIRGINIA

Prepared for

The Coal and Energy Commission
Commonwealth of Virginia

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SUMMARY

This report presents an evaluation of the potential radiological risks associated with uranium development in Virginia. Included in the report is a discussion of how radiological risks can be evaluated, a discussion of the results of an evaluation of the proposed Swanson project prepared by the proponents, Marline and Union Carbide (now Umetco), and a discussion of various considerations relevant to setting radiation protection standards for uranium development in Virginia.

A uranium development facility typically includes a mine, a mill, and a tailings (waste) management area. Each of these components can affect the levels of radioactivity in the environment. The possible effects that

such releases of radioactivity might have on the public can be assessed by radiation pathways analysis. Such an analysis makes use of models to estimate the exposure that members of the public (in this case persons most likely to receive the highest exposures) could receive by all of the possible pathways of exposure. Examples of potential exposure pathways include drinking water, consuming fish from nearby waters, eating locally grown vegetables and inhaling air, all of which may contain radioactivity released from the facility.

The models used in radiation pathways analysis incorporate basic scientific principles, the experience gained at similar projects, characteristics of the specific site and project being studied, and information about the lifestyles of potentially exposed people. The various models needed to represent the different pathways are often combined into computer codes. Several generic codes are currently available which users can modify to study specific scenarios or facilities.

The pathways analysis prepared by the proponents for the Swanson project utilized two codes: MILDOS and PABLM. The MILDOS code was used to estimate exposures from airborne emissions while the PABLM code was used to evaluate exposures from radionuclides released to the surface waters and subsequently transported via aquatic and/or terrestrial pathways. Exposures were estimated for several locations. The estimates indicated that the air pathways would be the dominant route of exposure at most locations, releases from the mine would contribute a large portion of the total dose, exposure would decrease rapidly with

distance from the sources, and exposures would markedly drop upon project close-out.

Table S.1 presents exposure estimates of particular interest together with some comparative values that can be used to put the estimates into perspective. The estimates indicate that under normal operating conditions the most exposed hypothetical off-site receptor would receive an incremental (above background) exposure of about 7.8 mrem per year taking into account all sources and pathways modelled. (The rem is a unit used to express the amount of radiation exposure. A millirem or mrem is one one-thousandth of a rem.) The population dose to all persons living within 50 miles of the project site was also calculated. This calculation indicated that an average member of the population within this 50 mile radius would receive an incremental dose of about 0.04 mrem per year, which is nearly 200 times smaller than that predicted for the most exposed off-site individual.

One way to assess the exposures predicted for the Swanson project is to compare them with current regulations. The two federal agencies largely responsible for setting radiation protection standards are the Environmental Protection Agency (EPA) and the Nuclear Regulatory Commission (NRC). The EPA currently requires that exposures to the public not be more than 25 mrem per year excluding exposures due to background radiation, releases from mines, or any exposure to radon gas and its short-lived daughters. The NRC requires that exposure to any individual in an unrestricted area not exceed 500 mrem per year. This

regulation does include exposure from radon and its daughters but, like the EPA standard, does not apply to any releases from mines or background radiation. The Swanson exposure estimates noted above and shown in Table S.1 were based upon releases from a fully developed facility including the mine, mill, and tailings facility.

A second way to assess the predicted incremental exposures is to compare them to existing levels of background (naturally occurring) radiation. Based on measurements taken at ten outdoor locations around the site in 1983, background radiation levels amount to approximately 90 mrem per year of external whole body exposure and approximately 120 mrem per year of radon daughter exposure (calculated on an equivalent risk basis). Additional exposures would result from taking naturally occurring radionuclides into the body through eating and breathing.

A third way to assess incremental radiation exposures is to compare the risks resulting from such exposures to the levels of risk associated with other activities. All activities present some element of risk. For many activities, the levels of risk are so small that no thought is given to avoiding those activities. In this context, a risk of death in the order of about one-in-a-million is in the range of risks commonly considered to be insignificant (*de minimis*). For instance, travelling 50 miles by car incurs a risk of death of one-in-a-million. The maximum predicted dose of 7.8 mrem per year to a hypothetical off-site receptor is within this range of risks and the risk to an average receptor living within a 50

mile radius of the site is lower still. This approach to assessing radiation exposures is illustrated by the data provided in Table S.1 where the lifetime risk arising from one year of exposure at the levels shown are presented.

TABLE S.1

Summary Comparative Dose and Risk

Receptor/ Characteristics	Annual Whole Body Dose	Risk per Million Persons**
NRC limit for general population (excluding background exposure and any release from mines)	500 mrem	50
Exposure to local residents from natural background radiation in vicinity of project prior to mining activity (dose equivalent due to external radiation and inhaled radon daughters)	210 mrem	21
Coles Hill property (on mining site)	16.4 mrem	1.6
Hypothetical off-site receptor with the largest potential exposure* (the location is currently unoccupied)	7.8 mrem	0.78

Hypothetical receptor living at Cedar Hill Hunt Club*	3.5 mrem	0.35
Hypothetical receptor living in Halifax*	0.15 mrem	0.015
Dose to hypothetical average receptor of the population currently living within 50 miles of project*	0.04 mrem	0.004
Average risk of dying from cancer in the U.S.	not applicable	180,000

Note

* Exposure estimates for hypothetical receptor, the Cedar Hunt Club resident and typical Halifax resident include contributions of all radionuclides released from all sources. Federal regulations exclude some sources and radionuclides.

** lifetime risk = annual dose (mrem) $\times \frac{1}{1{,}000} \frac{\text{rem}}{\text{mrem}} \times \frac{1}{10{,}000} \frac{\text{lifetime risk}}{\text{rem}}$

Our review of the pathways analysis prepared by the proponents of the Swanson project suggests that their estimates are likely indicative of expected exposures. Refinement of the analysis can reasonably be left to later stages of project development. The analysis prepared by the proponents also indicates that the maximum predicted exposures are well below federal requirements and represent only a few percent of the

natural background levels in the Swanson area. The total annual dose equivalent for all of the people living within 50 miles of the project during the 13 years of operations translates into a lifetime risk of about 0.04 additional fatal cancers. This can be put in perspective by noting that the current incidence of cancer-related mortality in the U.S. (approximately 18%) indicates that over a lifetime more than 140,000 cancer fatalities can be expected to occur in the population living within a 50 mile radius of the site irrespective of whether or not the Swanson project were developed.

Based on this risk assessment the following suggestions should be considered in the establishment of radiation protection standards for uranium mining in Virginia:

- all sources and pathways should be considered in assessing potential exposures
- the prime standard should be a maximum annual whole body dose consistent with a level of risk considered to be acceptable in Virginia
- secondary criteria (such as concentrations in air and water) and procedures for determining compliance need to be developed by State authorities
- efforts should be made to ensure that all doses are kept as far below the maximum dose limit as reasonably achievable, social and economic factors taken into account (ALARA).

REPORT OF THE

Virginia Coal and Energy Commission

TO THE GOVERNOR AND THE GENERAL ASSEMBLY OF VIRGINIA

[SEAL]

Senate Document No. 15

COMMONWEALTH OF VIRGINIA
RICHMOND
1985

* * *

E. Uranium (Councill, Colgan, Funsten, Nolen, Rosi, Smith, Watkins, Wolfe)

The Uranium Subcommittee (U.S.) was combined with the Uranium Administrative Group (U.A.G.) during the 1984 deliberations. The UAG was begun in 1983 for the purpose of finishing the detailed studies of the risks, effects, costs and benefits of uranium development in the Commonwealth. The Commission also established an interagency task force to assist the Uranium Subcommittee and the UAG in completing their work.

On October 1, 1984, this interagency task force submitted a report to the US/UAG specifying state performance standards which would be necessary for uranium mining and milling. This report also proposed a state regulatory framework for the administration and enforcement of the standards and regulations.

The US/UAG reviewed the task force report and formulated recommendations for the prerequisites and state performance standards believed necessary for uranium operations in the Commonwealth. These recommendations and specific proposals are set out in the US/UAG report in Appendix B below. More detailed recommendations are carried in the task force report and have been forwarded to the Commission for its consideration.

The Commission charged the Uranium Subcommittee with the task of reviewing proposed uranium draft legislation in November, 1984. The Subcommittee met on four occasions to review the legislation, to address specific concerns raised by the statutory language, and to ensure that the recommendations of the Uranium Task Force and the US/UAG were accurately reflected in the draft. In coordination with this effort, representatives of those state agencies which would be instrumental in the state regulatory program were contacted in order to assure that the agencies were satisfied with provisions of the draft which laid out their responsibilities.

The Uranium Subcommittee focused its attention on several sections of the draft and some changes were endorsed. One of the major revisions to the draft was to insert language into the legislation which would require a uranium licensee to develop a closure and post-closure plan, provide financial assurances for closure and post-closure care, and pay into a Uranium Response Fund which would guarantee one million dollars up front before any uranium production takes

place. The Fund would be available for use by the Commonwealth, at any time, for responding to to [sic] releases or threatened releases of any contamination into the environment.

The Subcommittee submitted the draft with these revisions to the Commission on December 17, 1984, reporting that it adequately places into statutory form, the specific state performance standards and recommendations of the Task Force and US/UAG Reports. The Uranium Subcommittee also asked for a refinement of the cost estimates submitted by the state agencies for starting up a regulatory program. This assessment was made with short-term costs in mind and under the assumption that Virginia would reach agreement status by 1986. The total projected cost for the agencies up to July 1, 1986 is $1.6 million.

IV. RECOMMENDATIONS

After careful consideration, the Commission has accepted the reports of its subcommittees. Based on these reports, the Commission makes the following recommendation: the proposed uranium draft legislation be passed on, without specific endorsement,* for consideration by the 1985 Session of the General Assembly.

Respectfully submitted,

Daniel W. Bird, Jr., Chairman

A. Victor Thomas, Vice Chairman

James F. Almand

Walter C. Ayers

John C. Buchanan

L. Blaine Carter

Charles J. Colgan

J. Paul Councill, Jr.

Cynthia J. Dahlin

Jerry D. Duane

Herbert O. Funsten, Ph.D.

Virgil H. Goode, Jr.

Glenn B. McClanan

Everard Munsey

Frank W. Nolen

Lewis W. Parker, Jr.

Ford C. Quillen

Alson H. Smith, Jr.

John Watkins

Richard A. Wolfe, Ph.D.

Donald L. McGlothlin, Sr., Ex Officio Member

* Twelve members voted in favor of a motion to pass on the proposed legislation without specific endorsement to the General Assembly and eight voted against the motion.

APPENDIX B

TO: Coal and Energy Commission

FROM: Uranium Subcommittee/Uranium Administrative Group

I. INTRODUCTION

In 1981, the General Assembly approved House Joint Resolution No. 324, requesting the Virginia Coal and Energy Commission to evaluate the effects of uranium development on the Commonwealth and its citizens. During the time since then – nearly four years – a great deal of time and effort has gone into one of the most thorough legislative studies ever undertaken in Virginia. The full Coal and Energy Commission has been involved in this process, holding meetings and public hearings throughout that period. In addition, a Uranium Subcommittee was created by the Commission Chairman to study the matter in greater detail and depth. This Subcommittee has made site visits to mines and mills in Texas, New Mexico, and Colorado. It held an informational seminar at Washington and Lee University. In a variety of other ways, it has sought to familiarize itself with the relevant issues.

In 1983, the Commission asked the General Assembly to create a Uranium Administrative Group (U.A.G.), made up of the heads of seven state agencies and an equal number of citizens appointed by the Commission Chairman, the Governor, and local governing bodies. The role given the U.A.G. was to assist the Commission in conducting detailed studies of the risks,

effects, costs, and benefits of uranium development in the Commonwealth. The U.A.G. also made site visits, held meetings, and used other means to inform itself on the issues.

When it became evident that the study could not be completed prior to 1984, the Coal and Energy Commission asked the U.A.G. and the Uranium Subcommittee to complete it during 1984. In addition, the Commission established an interagency task force (primarily those that were already on the U.A.G.) to assist the Uranium Subcommittee and the U.A.G. in completing the study.

II. Recommendation

We the members of the Uranium Subcommittee and the U.A.G. submit this report and transmit the report of the task force, thus completing the work given us last year. On October 1, the task force reported its findings and recommendations to us. We commend the task force for its diligent work. We also commend the Institute for Environmental Negotiation for the invaluable assistance it gave the task force. We have read and studied the task force report and held public hearings on its recommendations. We ourselves have discussed and debated these recommendations.

Based on all these efforts, we now conclude that the moratorium on uranium development can be lifted if essential specific recommendations derived from the work of the task force are enacted into law. Should any of these basic prerequisites fail to be included in

legislation, we as a group can no longer support the above conclusion.

Our recommendations for the prerequisites we believe necessary and the specific task force proposals that we endorse are set out below. More detailed recommendations are carried in the task force report and are forwarded, without specific endorsement, to be considered and studied by the Commission.

1. We believe that it is essential that Virginia become an agreement state with the right to license a uranium development facility.

2. We recommend that the following standards be imposed for uranium facilities: a total radiation dose standard for the general public of 25 millirem per year above background for sources other than radon and a concentration standard of one picocurie per liter above background for radon at any time. Together, these would yield a total maximum exposure level of 285 millirem per year for the nearest exposed individual. We also recommend, however, that the General Assembly specify that the ALARA principle (as low as reasonably achievable) be applied during permit review at a specific site in order to achieve doses less than the maximum 285 millirem level.

3. We believe a specific statute appropriate for the regulation of uranium mining should be enacted.

4. We recommend that the state's current nondegradation standard with respect to water should be clearly affirmed and made applicable to uranium

development; we do not believe, however, that any socio-economic variances should be allowed for uranium operations.

5. We agree that no process water should be allowed to be discharged to surface waters from either the mill or the tailings facility.

6. We recommend that state regulations and performance standards that govern hazardous waste land disposal facilities be specifically applied by statute to uranium development facilities. On the basis of information and clarification received following the completion of the task force's deliberations, we do not necessarily recommend that a 5 picocurie per gram standard be employed to determine when sub-grade ore and waste rock should be treated as a hazardous waste. It is our understanding the EPA standards in this regard are forthcoming which the State would then adopt; if such standards are not forthcoming, the threshold level should be addressed by the State.

7. We agree that a schedule of financial guarantees and fines should be developed to assure strict compliance with license and permit conditions. It is very important that such a schedule be developed carefully, since the taxpayer will likely bear the ultimate liability for compliance failures that have not been properly addressed in the schedule.

We also agree that a strict liability policy for damages be adopted and that this policy be supervised by the courts.

8. We recommend that a regulatory program be enacted which assigns (i) the Department of Health lead responsibility for negotiating an agreement with NRC and for issuing mill and tailings licenses, (ii) the Department of Mines, Minerals and Energy lead responsibility for licensing mines and for on-site monitoring and enforcement, and (iii) responsibility to these and other agencies for matters within their established areas of authority. We also urge the continuation of the task force as a coordinating body while the regulatory program is being put in place.

9. We agree that the task force should work during 1985 on a detailed budget for the total regulatory program. In an effort to acquaint the General Assembly with the projected costs of a regulatory program, however, we have asked the regulatory agencies for individual cost estimates. This data is attached to this report as Appendix I.

III. A Note on the Value of Cost-Benefit and Risk Assessment Studies

A major portion of the work that underlies the recommendations of both the task force and the Uranium Subcommittee/U.A.G. concerns analyses of the costs, benefits, and risks likely to accompany uranium mining and milling operations.

We felt it was important, in evaluating whether uranium development should be allowed to determine whether the benefits associated with development would exceed the costs. The Tayloe Murphy Institute

(TMI) was retained to assist with this assessment. In its report, TMI emphasized "that a large degree of uncertainty exists as to the magnitude of some costs and benefits." We acknowledge this fact. What we sought is to have costs and benefits quantified where possible and, at the same time, to note those which do not lend themselves to quantification.

We also wished to assess as well as we could the risks that the population at large would face from a uranium development facility. We realize that differences of opinion exist within the scientific community over the relative risks an individual experiences from exposure to a given level of radiation. Based on the studies done thus far at the proposed development site in Pittsylvania, our consultants have told us that a total of .04 additional fatal cancers are likely for the population within fifty miles of the project during its thirteen years of operation. Some individuals have argued that the risk is actually ten to fourteen times greater than our consultant's estimate. If this is so, the risk increases to .4 or .56 additional cancer deaths. This can be compared with the 140,000 fatal cancers that can be expected during the lifetime of that same population whether or not uranium is mined.

IV. Draft Legislation

We are attaching as Appendix II to this report legislation drafted by the Division of Legislative Services to accomplish the recommendations included in this report. Because of the time constraints involved in this

study, we as a group have not had time to review or comment on this draft. Therefore, we pass it along simply as a staff document.

V. Summary

Our work and the task force's studies this year provide a reasonable basis for a legislative judgment on the costs, risks and benefits of uranium development in the Commonwealth. Further studies and more detailed analyses of specific uranium development proposals will be appropriate and essential ingredients of the licensing process. We wish to reiterate our conclusion that if the General Assembly lifts the moratorium on uranium development, it should simultaneously enact into law recommendations set out in this report to assure adequate state regulation of uranium mining and milling.

Respectfully submitted,

J. Paul Councill, Jr., Chairman

* Watkins M. Abbitt, Jr.

Richard Burton

Keith Buttleman

Mason Carbaugh

* P. Scott Eubanks

* Herbert O. Funsten, Ph.D.

Dr. J. B. Kenley

Gerald P. McCarthy

* W. R. Meyer
* Frank W. Nolen

Fred D. Rosi, Ph.D.

* Alson H. Smith, Jr.
* Claude Swanson

Fred W. Walker

* Richard A. Wolfe, Ph.D.

* These individuals concur in the general recommendations of the report, but have filed additional statements which follow.

Dissents

The following individuals dissent from this report, as indicated in their attached statements.

Elizabeth H. Haskell

Frank E. Wallwork

Statement of Watkins M. Abbitt, Jr.

I concur in general with this report and its recommendations, but I believe that 1 picocurie per liter (see recommendation #2) is too high a maximum for radon.

Statement of Alson H. Smith, Jr.

I generally support this report. However, I still have questions with respect to the need for standards as severe as those pertaining to no-discharge and nondegradation. While I feel that protection of our water resources is necessary, I am not sure that these measures are the best approach. Therefore, I will continue to consider what is the best approach to protection of our water resources as these recommendations are considered by the Coal and Energy Commission and the General Assembly.

Moreover, insofar as the uranium industry is comparable to other industries in the State, it should be treated so.

Statement of Richard A. Wolfe.

I concur in general with the recommendation that the uranium industry can be allowed in Virginia if certain standards are instituted. However, some of the recommended standards are far too stringent. The uranium industry should be regulated like any other industry insofar as it is like any other industry. If it can meet safe drinking water standards to ensure that the environment is protected without the severe

requirements of non-degradation and no-discharge, less severe requirements should be imposed.

Statement of Claude Swanson

I agree that the moratorium can be lifted if specific laws and regulations are adopted. However, I would like to offer the following comments on the foregoing report.

Recommendation 4 – The state currently has an *anti-degradation policy.* Why do we keep changing the words? The idea is that we are going to treat the uranium industry the same as any other industry. If there is a hazard, let's correct it regardless of the business.

Recommendation 5 – Another old point is that this operation should be allowed to discharge process water if it meets state standards. This state already has lots of industries dealing with artificial chemicals that are allowed to discharge that are much more dangerous than nature's materials. If the state water standards needs tightening, then that is a problem to be examined another day.

Recommendation 7 – I feel that the Task Force has had a useful life and has done its job. I do not believe we need to make it a permanent organization. The US/UAG never agreed to continue he life of the Task Force. So I was surprised to see it included as a recommendation.

I would like [sic] also like to observe that the most important conclusion of the TMI was that the benefits outweighed the costs 26 to 1. That statement should be included since that was the most important result of that study.

Finally, I think the radiation risks used by SENES were average or generally accepted risks. Of course some people think the risks are overstated. We should not undermine the study by only pointing to the opponents – otherwise no one will even consider having x-rays.

To conclude, if the US/UAG really wanted to find industries that are hazards to the population of the Commonwealth, we should be looking elsewhere. I should add another simple thought that the uranium industry's hazards are radioactive and can be easily found unlike other modern business waste materials that we have learned to live with and manage.

Statement of Frank W. Nolen

I concur generally with the direction that the foregoing report would take the State. I believe that the uranium moratorium can be lifted, and I also agree that specific statutes and regulations need to be adopted to regulate this industry. Nevertheless, I do wish to make the following points to clarify my position with respect to the recommendations:

1. There are some recommendations which can be altered in such a way that the Subcommittee and

UAG would not have to withdraw its support from its general recommendation (e.g., a redesignation of a lead agency).

2. I believe it is desirable, rather than essential, that Virginia become an agreement state.

3. The radon concentration standard should be an average of one picocurie per liter.

4. Except for matters pertaining to radionuclides, uranium operations should be treated the same as any other industry. In line with this philosophy, the uranium industry should be expected to comply with current anti-degradation water standards. Likewise, liability requirements and policies for this industry should be based on similar policies for other industries.

5. The discharge of process water from the mill and tailings water should be allowed if the water meets existing state and federal standards.

6. I would like to note that the Tayloe Murphy Institute projected a cost benefit ratio for the proposed Swanson project of 26 to I.

7. The General Assembly should appropriate sufficient funds to ensure compliance with laws and regulations applicable to a uranium industry.

[SEAL]

COMMONWEALTH of VIRGINIA

Division of Industrial Development
Washington Building/Richmond, Virginia 23219
(804) 786-3791

MEMORANDUM

TO: Bernard Caton, Ph.D.

FROM: Scott Eubanks /s/ SE

DATE: November 8, 1984

SUBJECT: Draft Report of UAG

We believe your draft report accurately reflects the general positions taken by the U.S./UAG. It was a difficult task, no doubt, to produce this draft, and you and your associates are to be congratulated.

We have concerns about recommendation 4. First, the concept of non-degradation, in its most strict sense, seems unrealistic in any environment that is subject to activities by human beings. What is the meaning of non-degradation? No matter how well ameliorated, much of what we do in the normal course of living could be described as degrading to the environment. Second, the treatment of industry by state and local governments in their regulatory role needs to demonstrate the greatest degree of equity possible. If socioeconomic variances are allowed for some industries with regard to water regulations, then all industries should be allowed such variances.

PSE/dsh

[SEAL]

THE COLLEGE OF WILLIAM AND MARY
Williamsburg, Virginia 23185
Chartered in 1693

Department of Physics
(804) 253-4471

November 5, 1984

Dr. Bernard Caton
Coal and Energy Commission
P.O. Box 3AG
Richmond, VA 23208

Dear Bernie,

I agree in general with the US/UAG draft report, but am still concerned about the 1 pCi/ℓ radon standard for additional exposure for the general public due to uranium facility operations. This standard represents an appreciable fraction, ≃100%, of average ambient background. It also may account for a fair fraction, ≃20%, of all nonsmoker lung cancer incidence, using NCRP #78 May 1984, risk estimates (§ 11.2.2 and Senes report, p. 3-4).

Although there are indications, (Radford report on Scandanavian [sic] miners in the July '84 New England Journal of Medicine and EPA estimates), that the above risk may be somewhat worse by a factor of x3 to x10, I got the impression in talking with Dr. Naomi Harley who chaired the NCRP report, that the NCRP estimates were based upon the most extensive work currently available. She also mentioned that a large

scale concentration of 1 pCi/ℓ to the public would be vanishingly rare.

In view of this I would like to suggest setting ~1/3 pCi/ℓ or thereabout as a standard with the proviso that if widespread radon and radon daughter ambient levels, allowing for cyclic variation and averaged over a suitable time interval begin to rise over a certain amount, say 0.1 pCi/ℓ due to uranium facility operation, then appropriate agencies be notified. This emphasizes careful radon monitoring, a critical and key aspect of state regulation.

On a different matter, the total cost estimate, excluding consolidated lab work, of $850K for first year state regulation is similar to agreement state cost estimates of $300-500K made ≈10 years ago, adjusted to inflation.

Sincerely,

/s/ Herbert
Herbert O. Funsten

HOF/dbf

[SEAL]

COMMONWEALTH of VIRGINIA

State Air Pollution Control Board

ROOM 801, NINTH STREET OFFICE BUILDING
RICHMOND, VIRGINIA 23219
TELEPHONE: (804) 786-2378

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RICHMOND

AXEL T. MATTSON
YORKTOWN

WALLACE E. REED
CHARLOTTESVILLE

W.R. MEYER
EXECUTIVE DIRECTOR

November 2, 1984

Bernard Caton, Ph.D.
Research Associate
Division of Legislative Services
P. O. Box 3-AG
Richmond, VA 23208

Dear Bernie:

The report reflects the position of the majority of the US/UAG members but exception is taken to the proposed radiation exposure standard as expressed in Item 2, Section II Recommendation. The general public should not be exposed to any higher radiation dose

than necessary because a totally risk-free threshold cannot be identified. The International Commission on Radiological Protection (ICRP) has provided guidance to many countries that reflects this philosophy. ICRP recommends the establishment of dose limitations based upon the following three principles:

"1. No practice shall be adopted unless its introduction produces a positive net benefit;

2. All exposures shall be kept as low as reasonably achievable, economic and social factors being taken into account; and

3. The dose equivalent to individuals shall not exceed the limits recommended for the appropriate circumstances by the Commission."

The cost benefit study proposed by the Tayloe Murphy Institute provides information on the first principle. The second principle is commonly referred to as ALARA, an acronym for as low as reasonably achievable. The common interpretation of ALARA is that there is an appropriate degree of dose reduction, below the recommended individual dose limits, which should be determined by some form of cost benefit analyses. The ALARA principle has become a major objective of the practical application of radiological protection programs in many countries including the United States. Because of the many variables in applying this principle, it is most suited to be used on a case-by-case basis in a permit process. The third principle, which cites a dose exposure limit, is necessary in

applying the ALARA principle and is suitable for establishment by statute.

As stated in the US/UAG report, a uranium mill/mine can be built in Pittsylvania County with only a total of 0.04 additional fatal cancers likely for the population within fifty miles of the project during its thirteen years of operation. However, this is based on a total annual dose of 7.8 millirem per year from the proposed facility. Any increased exposure could well result in increased cancer. The proposed standard of 285 millirem per year would allow increased exposure. If the ALARA principle is established as part of the proposed radiation standard, this will not happen. In addition, the studies have shown that more stringent standards can be set. It seems persuasive to establish a performance standard which would be applied at the site boundary and this would limit exposure to the general public. Throughout the industry this limiting value is taken as one third of 500, or 170 millirem per year from particulate emission, excluding radon. It is recommended that a standard be established using the ALARA principle and in no case will the allowable radiation exposure exceed a total of 170 millirem per year. This equates to approximately 25 millirem per year from all sources except radon and 0.5 picocurie per litre from radon.

It is my understanding that the US/UAG at its October 24, 1984, meeting endorsed the Task Force Report with certain comments. This should be reflected in the report. On page 7 it is suggested that on line 5

the words "and the Task Force Report" be inserted after the words "this report."

Sincerely,

/s/ [Illegible]
W. R. Meyer
Executive Director

WRM/bh

cc: E. H. Haskell
R. W. Burton
R. C. Collins
R. S. Stroube
W. W. Parks
K. C. Van Auken

Elizabeth H. Haskell
P.O. Box 3903
Martinsville, Virginia 24112

(703) 632-3865

COMMENTS ON THE US/UAG REPORT

A Different Perspective

I do not agree with the recommendation of the Uranium Subcommittee/Uranium Administrative Group (US/UAG) that the moratorium on uranium development can be lifted.

The case for uranium mining and milling in Virginia has not been made, in my opinion, despite extensive

studies by the US/UAG, consultants and the industry. The burden of proof is on those who wish mining to proceed and this burden has not been met for me. The risks of cancer deaths and illnesses from radiation released from the uranium ore and waste products called tailings are high in the state's proposal. The great many unknowns about the development and its impacts could push health risks much higher and raise costs to the Commonwealth, substantially reducing projected economic benefits.

If Virginia allows uranium mining and milling, it would be the first state to do so in a climate where rainfall exceeds evaporation and where many people would be exposed potentially to the resulting radiation in the water and air. Previous domestic uranium mining has been in arid, sparcely [sic] populated Western regions where transmission of radiation in water is not a concern. In Virginia's wet climate where water is discharged from the site and filters through tailings, the transmittal of radiation to people through streams and the groundwater is a major issue.

The experimental nature of the uranium industry in Virginia's wet climate and the environmental problems from radioactive tailings disposal in the West have caused the General Assembly to be justifiably cautious in approving the industry. Legislation has called for the assessment of risks and benefits. The US/UAG has had no actual experience to evaluate. French uranium is cited by the industry as similar, but no impacts data were produced on this situation. Rather, the UTF and US/UAG reports and conclusions

about costs, benefits and risks of a uranium industry are based on consultants predictions using mathematical models and other techniques to speculate about future effects of one mine and one mill. This site is known as the Swanson site in Pittsylvania County. No estimates were made of impacts of a statewide industry.

In my judgment, the consultants risk assessment study and cost/benefit analysis on which the UTF and US/UAG reports are based underestimate the health risks and overstate the benefits of the Swanson uranium mining and milling for the following reasons:

1.) The Swanson risk and cost/benefit calculations assume no negative impacts on ground water or surface waters. It is assumed that there will be no leaching of radioactive wastes or heavy metals to groundwaters that are used by neighbors, no substantial polluted discharges to streams, no accidents, no long-term deterioration or collapse of the 100 foot high tailings pile by flood, earthquake, erosion or design failure for the thousands of years the tailings are radioactive.

These are unrealistic assumptions in the net precipitation climate of Pittsylvania County, where groundwater reaches close to the surface and where above-ground tailings disposal will be required exposing the waste to weather and collapse. Mill Creek will be diverted around the site but no negative impacts are projected. An open-pit mine will be dug to 850 feet through the Chatham Fault and tailings disposed near

the Bannister River, using an undemonstrated containment technology.

A VPI/SU professor consulting with the UTF concluded that virtually all contaminants that would be disposed in the proposed tailings pile will eventually leach to groundwater. When and how fast pollutants will filter out will depend on the thickness and material of the liner under the tailings pile.

If the study's assumptions are wrong and polluted groundwaters flow through the rock fractures to affect groundwater supplies or surface water pollution increases, then the risks and economic costs to individuals and the state would rise.

2.) The US/UAG report estimates that up to .56 additional cancer deaths will result from the one mine/one mill Swanson development in the 13 years of operation. This assumes that the maximum exposed individual will receive 7.8 millirems of radiation, based on the industry and state consultant estimates. However, the UTF and the US/UAG have proposed state standards that would allow 285 millirems of radiation to the maximum exposed person, which is estimated to produce up to 21 cancer deaths during the 13 years. It is reasonable to expect that if the law permits 285 millirems that the industry could emit up to that level.

If more than one mine and one mill is developed in Pittsylvania County or other parts of the state, additional people will be exposed and risks increase. To estimate the maximum cancer risk from a uranium industry, rather than just one mine and mill, calculations

should be based on the proposed statutory total radiation standard of 285 millirems. This amount of radiation could produce anywhere from 28.5 to 399 additional cancer deaths in an average population of one million exposed persons. Various scientific organizations have differing views about just how many cancer deaths to expect. The state's consultant used the lower extreme of 28.5, while other governmental scientific organizations predict up to 399 cancer deaths.

3.) Health risks, other than neighbors' cancer deaths, were not estimated for the Swanson development. Traditional risk assessment methods are limited to predicting fatal cancers in the general public. The following risks are reasonable to expect:

* Worker accidents, illnesses and deaths were not included in the risk assessment but were left to future analyses. In addition to the employee risks associated with any surface mining, they will be exposed to radioactive materials in the mine, mill and tailings areas.

* Illnesses in the general population, including cancer, that do not result in death, were not included.

* Impacts on sensitive persons, notably children and pregnant women, would be more substantial than the impacts on the average population projected.

* Health risks were based on normal, expected operating conditions and do not, because they cannot, predict effects of a catastrophic event such as a flood, major accident or design failure that could collapse the tailings pile.

4.) Benefits calculations assume that the Swanson mine and mill will operate at full production for the 13 years of expected operation, producing 468 full-time jobs, while the history of the industry is one of cyclical unemployment. Benefits to employees would decrease and costs to the Commonwealth increase if periodic unemployment occurs.

5.) No calculations were made by the consultants, UTF, or the US/UAG of the long-term health and environmental effects and costs to the Commonwealth, those that occur for many years after closure of the mine and mill. Risks, costs, and benefits are projected for only the 13 years of operation, although risks and costs will continue for many years after the 13 years of benefits cease.

The US/UAG estimates that first year costs to the Commonwealth to regulate the Swanson site to be $850,510. Recurring costs during mining operations are projected to be $664,410 a year. No post-closure costs are projected, although the General Assembly should expect some to occur. After closure, the Commonwealth or the Federal Government will assume permanent ownership of the tailings pile, along with the costs of monitoring and managing the site, and responsibility for damages and cleanup should an environmental problem occur. In the event the tailings management technology fails or a flood or earthquake occurs, a very expensive tailings remedy could be required.

These calculations of long-term costs and predictions of catastrophic events were not made by state officials because of the very high degree of uncertainty

about such impacts of uranium mining and milling in Virginia. A great deal of hard work and investigation by legislators, state officials, private citizens and the industry has been devoted to improving our understanding of impacts of a Virginia uranium industry. The Swanson site-specific research was a valuable case study, which enabled the UTF to draft better uranium standards. However, while knowledge of a Virginia uranium industry has improved greatly over the past two years, uranium mining and milling in our climate and population density would be an experiment. Predicting impacts of such development are informed guesses, at best.

In my judgment, the unknowns and the identified risks to the public and the environment exceed the projected benefits and call for retaining the moratorium on mining and milling. This is a conservative approach that asks for a higher level of confidence before approving this unique industry.

However, if the General Assembly weighs the risks, costs and benefits differently, is willing to accept the uncertainties, and lifts the moratorium on uranium mining and milling, I endorse the US/UAG and UTF recommendations for legislation.

The total radiation dose standard should be made more protective for the public than the 285 millirems a year proposed in Recommendation 2 of the report. This proposal would expose an individual to the equivalent of 10 chest X-rays a year. This is added to the naturally occurring radon at the Swanson site of 130 millirems or about 5 chest X-rays, for a total of 15 X-rays

each year of operation. In my view, this is too high a level of risk for Virginia to accept. Regulators hope to set lower exposure limits in the uranium permitting process, but lower levels should be specifically written into any uranium mining law. A better alternative standard is a total radiation dose standard of 25 millirems per year above background for sources other than radon and a concentration standard of 0.5 picocurie per liter for radon, for a total of approximately 170 millirems a year.

In addition the concept of setting radiation exposure limits in a uranium permit that are more stringent than the statutory limit (known as As Low As Reasonably Achievable or ALARA) should be specifically authorized in any uranium mining law, so that radiation limits below 170 millirems are possible.

A trust fund should be established in any authorizing statute to cover long-term state costs of monitoring and managing a closed tailings site, including funds to pay for remedial action if a major environmental problem occurs. The mining companies and not the taxpayers of Virginia should bear this burden.

/s/ Elizabeth H. Haskell
Elizabeth H. Haskell
Member, Uranium
Administrative Group

Bernard Caton, Ph.D.
Research Associate
Division of Legislative Services
P.O. Box 3 AG
Richmond, Va. 23208

505 Buena Vista Drive
Halifax, Va. 24558
November 3, 1984

Dear Dr. Caton:

I do not concur with the conclusion of the Uranium Task Force. I also do not agree to the text of recommendations two (2) and revised six (6) and suggest the inclusion of an additional provision.

It is my considered opinion the conclusion should have been "the moratorium shall be continued until such time as proven technology has been demonstrated which will comply with the recommendations derived from the work of the task force."

The reasons for rejecting the conclusion of the Uranium Task Force are briefly summarized as follows:

1. The technology to prevent seepage of radionuclides, heavy metals, or chemicals from the tailings area into the ground water has not been developed.

2. Risk assessment:

    a. The whole study is not totally reliable because it is premised on a level of limited radiation emission which I cannot conceive as being achievable during an actual uranium operation.

    b. The conclusions relate only to cancer mortality; no consideration given to incidence,

nor any reference to any effects on pregnant women.

c. Risk to workers at the facility is not evaluated.

d. No assessment of a "worst case" scenario which should be of primary concern.

e. No evaluation of risk after closure or during a tempoary [sic] shut-down.

3. Cost/Benefit Analysis:

a. This study is premised on the pr)onent's projection of a full 350 day operation of the facility for 13 years. I cannot accept that premise and believe it is a fallacy to accept conclusions based on that premise.

b. All of the costs are inherent to the program whether the facility operates at 100% capacity or 50% of capacity; the benefits are not. This adversely affects any benefits to cost ratio.

c. Many of the costs are not quantified particulary [sic] as they apply to the environment and effects on local agriculture and dairy operations.

d. Income to the state is overestimated. Corporate income tax will be minimal as Marline has prior significant losses which can be carried forward for ten (10) years to offset any potential profit. Because of the projected wage scale income from individual state income tax payments is overestimated.

e. Cost to the state to implement the necessary programs and subequent [sic] monitoring of those programs far exceeds the potential income.

The following comments are adressed [sic] to the recommendations:

Recommendation number 2: This provision allows for an exposure of 285 millirem per year and in my opinion generates too high a risk factor. The concentration of one (1) picocurie per litre above background for radon is too high, and should be reduced to at least one half (1/2) picocurie per litre and possibly less. Marline projects they can meet a tighter standard and it should be established.

Recommendation number 6 revised: The standard of five (5) picocuries per gram to determine when sub-grade ore and waste rock is to be treated as hazardous waste should be maintained. Sub-grade ore particularly creates an hazard and an additional risk factor.

As an additional provision, I suggest the tailings to be deposited at the Swanson site be restricted to the waste generated from the Swanson mine.

I realize this suggestion was not considered to be a legislative decision, but bear in mind, if not implemented, the risk assessment considered only a two hundred (200) acre site.

I recognize that I am in the minority on the decision of the Uranium Administrative Group, but as you indicated in your letter of October 30, these comments will be attached to the final report.

Thank you for the opportunity to express my concern and disagreements. I also express my appreciation to you and the rest of the staff in keeping all members of the U. A. G. so well informed, and for the many courtesies extended to me personally.

/s/ Frank E. Wallwork
Frank E. Wallwork
Member of the U. A. G.

A Preliminary Assessment of Potential Impacts of Uranium Mining in Virginia on Drinking Water Sources

FINAL REPORT

REVISED February 22, 2011

[SEAL]

Executive Summary

A large uranium reserve, estimated to be over 100 million pounds, was discovered at the Coles Hill site in Pittsylvania County, Virginia about three decades ago (see Figure ES-1). This reserve could be large enough to supply the fuel to all nuclear reactors in the United States for two years. There is interest in the mining and milling of these reserves, which are located upstream of John H. Kerr Reservoir (Kerr Reservoir) and Lake Gaston in southern Virginia. This report describes, and provides the results of, a preliminary assessment that investigated the potential impacts of a uranium tailings release on downstream water sources. Specifically, the assessment focused on the potential of a catastrophic failure of a uranium-tailings containment structure and subsequent discharge of uranium tailings into the Banister or Roanoke Rivers and the resulting radioactive contamination in downstream water bodies including the Kerr Reservoir. The preliminary assessment aimed to address the following objectives:

- Estimate the amount of uranium-contaminated sediment and water that might reach Kerr

Reservoir under normal and extreme precipitation events; and

- Estimate the potential increase in radioactivity levels and other contaminants in Kerr Reservoir.

Background

Mined uranium ore is normally processed by first grinding it to a small, uniform particle size (this is called the milling process) and then treating it with chemical solutions to extract the uranium. Because uranium ore is mostly present at relatively low concentrations in the United States (0.05 to 0.3 percent), uranium milling and extraction produces vast quantities of waste material known as tailings, which are typically stored in impoundments formed behind containment structures such as dams.

These tailings retain about 85 percent of the original radioactivity for hundreds of thousands of years because of other radioactive materials, such as radium and thorium, which are not extracted during the uranium milling process. These radioactive materials can adversely affect public health if they are not confined properly or are released to the environment. In addition, uranium tailings still contain uranium and other potentially hazardous substances such as arsenic, which are toxic and can affect public health if they leach into groundwater or surface water.

Historically, a number of tailings containment structures have failed in the United States and elsewhere,

resulting in the release of radioactive (such as uranium tailings) and non-radioactive (such as coal ash, copper, iron, phosphate tailings) materials to downstream surface waters. Although there were a variety of reasons for these failures, such as seepage, structural defects, earthquakes, and foundation settlement, extreme precipitation events caused most of the failures world-wide, which, in many cases, led to loss of life and caused severe contamination downstream.

Climatic and geologic conditions surrounding uranium ore deposits in Pittsylvania County make the area prone to extreme rainfall events including tropical storms and hurricanes, some of which have generated substantial flooding. Although presently uranium tailings are required to be stored in specially designed waste disposal facilities called containment cells or structures in compliance with Nuclear Regulatory Commission regulations, there is concern that a failure of the uranium tailings containment structures could result in the contamination of the downstream drinking water supply sources along the Banister River, Roanoke River, Kerr Reservoir and Lake Gaston.

Preliminary Assessment Approach

In an effort to address this concern, a preliminary assessment was conducted to investigate potential impacts of uranium tailings discharged into Banister and Roanoke Rivers in case of catastrophic failure of a containment structure.

The preliminary assessment was based on a one-dimensional (1-D) numerical modeling/simulation of the Banister and Roanoke Rivers and the Kerr Reservoir using the CCHE1D model developed by the University of Mississippi for the United States Department of Agriculture. CCHE1D is a software package that can simulate one-dimensional unsteady flows, sediment transport and streambed morphodynamics, and transport and fate of contaminants.

The framework employed for the preliminary assessment included simulation of the variation in radioactivity concentrations along Roanoke and Banister rivers and the Kerr Reservoir in case of catastrophic failure of a containment structure under sunny day and extreme flooding conditions throughout a period of one year each. Because the exact location of the potential mine, milling facility and the containment structures were not known at the time of this assessment, it was assumed that the containment structures could be located anywhere in the vicinity of Coles Hill and/or somewhere in the proximity of the area where former uranium leases were issued (as shown in Figure ES-1), within either the Banister River or Roanoke River watersheds.

Due to lack of site specific data associated with uranium milling, extraction, tailings properties and containment structure (location, volume, etc.), data from literature were used for various parameters needed for the simulations – such as the sediment concentration in tailings, particle size distribution, and radioactivity concentrations for radium-226 and thorium-230.

A range of values reported in the literature were used along with variables such as the volume of tailings and flood hydrographs to establish a range of possible scenarios that could potentially be implemented for this project:

- Volume of tailings – 0.8, 2.5, 5.0 and 8 million cubic meters (to account for storage volumes that can be achieved with a dam height of 5 m, 15 m, 30 m, and 50 m, respectively, and a surface area of 40 acres)
- Sediment concentration by weight of tailings – 15- (CSW1), 32.5- (CSW2), 50- (CSW3), and 70-percent (CSW4) as reported in literature
- Flood hydrographs – 10-percent (HYD1), 1-percent (HYD2), and 0.2-percent-annual-chance (HYD3) events (maximum discharges recorded by USGS gages in Banister and Roanoke Rivers ranged between 58 and 94-percent of the 0.2-percent-annual-chance hydrographs) and an average water year hydrograph for the rivers
- Particle size distribution of tailings – two different particle size distributions reported in literature were used – one represents a wider grain size range and has a higher percentage of coarser sediments (GSC1) and the other has a narrower range of size classes and a higher percentage of finer sediments (GSC2).
- Radioactivity level and uranium content in tailings – minimum (RAD1) and maximum level (RAD2) radioactivity content due to radium-226 and thorium-230, and uranium

content as reported in literature for the acid leaching process[1] (for three components of the tailings – sands, slimes and liquids)

The simulations were carried out to observe the movement of tailings and the variation of radionuclide concentrations in Banister and Roanoke Rivers and Kerr Reservoir for a period of one to two years depending on the scenario. Tailings containment failure under sunny day (assumed dam failure without the effect of extreme floods) and extreme flooding (assumed dam failure as a result of an extreme rainfall event) conditions were simulated. For tailings containment failure scenarios under extreme flooding, percent annual chance hydrographs (which cause the dam failure) were appended by the average water year hydrograph.

Assessment Results

The preliminary assessment shows that radiological contaminants (radium-226 and thorium-230) in the water column and sediments in Banister and Roanoke Rivers and the Kerr Reservoir could result in water column concentrations exceeding the regulatory maximum contaminant level[2] (MCL) for combined radium-226 and 228 in drinking water for an extended period of time. However, the radioactivity concentrations in

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[1] Radioactivity characteristics of uranium tailings exposed to alkaline leaching are less defined than acid leaching. Data reported for liquid and slime components of tailings fall within the limits used for this assessment for acid leaching.

[2] There is no MCL for thorium; however, MCL for alpha/photon emitters is 15 pCi/L.

the water column subsided after a certain period of time and fell below the MCL for combined radium by the end of simulations (which were run for approximately 364 days) as shown in Figure ES-2 and Table ES-1.

It was also observed from the simulations that while the radioactivity concentrations in the water column diminish over time as river flow flushes the radionuclides from the system to Lake Gaston and further downstream, a significant amount of the radionuclides remain in the river/reservoir system adsorbed to the sand and slime components of the tailings that settle at the river bottom and in the reservoir. Table ES-2 shows how much of the initial radionuclides that entered each river as a result of tailings containment failure remain in the system after a one year of simulation for the same scenario provided in Table ES-1. As can be seen in Table ES-2, approximately 78 percent or more of the initial radioactivity released into the river/reservoir system still remains in the system and mostly in the sediments at the bottom of the river and in the reservoir after one year.

The radioactivity remaining in the sediments of bed layers will be prone to re-suspension multiple times over the years as large flows and extreme flood events are experienced by the rivers. To validate this phenomenon, a series of simulations were carried out in which a 1-percent annual chance hydrograph was imposed at the end of a sunny day failure scenario to evaluate the effect of an extreme flood on re-suspension of contaminated sediments. The results showed

that the re-suspension of contaminated sediments from the river bed can cause radioactivity concentration levels to rise as shown in Figure ES-3. For example, simulations for Roanoke River revealed that radioactivity concentrations could increase by up to an order of magnitude that would be three times higher than the regulatory limit of 5 pCi/L.

In addition to the radioactivity impacts of uranium tailings (due to radium and thorium) on the rivers and Kerr Reservoir, the transport and fate of uranium was also simulated since uranium is a toxic substance that can impact human health. The results show that uranium concentrations in the water may temporarily reach or exceed the regulatory limit of 30 µg/L throughout the river/reservoir system depending on its solubility as shown in Figure ES-4. Similar to radium and thorium, the majority of uranium in tailings settle in the bed sediments. Therefore, uranium-contaminated sediments will also be prone to re-suspension multiple times over the years as discussed earlier in the case of radioactivity-contaminated sediments.

Conclusions

Simulation results and conclusions derived as a result of the preliminary assessment were based on the best available information. These conclusions could be impacted depending on the variation in key parameters, such as the dam height for the uranium tailings containment structure, sediment concentration in the tailings, radioactivity level, uranium content, solubility

characteristics of radiological elements and uranium, and the particle size distribution.

- A catastrophic failure of a uranium tailings containment structure could significantly increase radioactivity concentrations in the river/reservoir system and exceed the MCL established for radiological contaminants for drinking water for an extended period of time.
  - The MCL for gross alpha activity in Kerr Reservoir (water column) could be exceeded by an order of magnitude.
  - The gross alpha activity in Kerr Reservoir (water column) could remain above the MCL for several months or more after the failure.
- A significant amount of radioactivity remains in the river/reservoir system after a year following a catastrophic tailings dam failure.
  - The majority of radioactivity that enters the river/reservoir system as a result of a failure remains in bed sediments a year after the failure while dissolved and suspended radionuclides in the water column are flushed downstream.
  - Subsequent floods could re-suspend sediments and increase radioactivity concentration in the water column above the MCL established for radiological components for drinking water.

- Uranium concentrations in the water column may temporarily reach or exceed the MCL limit of 30 µg/L depending on its solubility.
  - Solubility of uranium appears to significantly affect its presence in the river/reservoir system. The more soluble the uranium, the faster it flushes out of the river/reservoir system to downstream water bodies. If the uranium is less soluble, the majority remains in the system deposited at the bottom of the river/reservoir system and can be re-suspended by subsequent floods.
- Reservoir operations (varying reservoir level to accommodate operational demands) may affect the arrival and residency time of radioactivity in Kerr Reservoir.
  - Length of radioactivity residence time in the reservoir depends on the inflows – higher flows flush radionuclides faster and reduce residence time; lower flows, on the other hand, increase residence time.

RESOLUTION REQUESTING THAT THE VIRGINIA GENERAL ASSEMBLY MAINTAIN THE CURRENT MORATORIUM ON URANIUM MINING UNTIL THE COMPLETION OF SCIENTIFIC STUDIES EVALUATING THE RISK OF CONTAMINATION OF DRINKING WATER SUPPLIES AND HARM TO THE PUBLIC HEALTH.

WHEREAS, the Commonwealth of Virginia currently enforces a moratorium on uranium mining; and

WHEREAS, a large uranium reserve, estimated to consist of over 100 million pounds of uranium, is located in Pittsylvania County, Virginia ("Uranium Reserve"); and

WHEREAS, Virginia Uranium, Inc. owns, or has an ownership interest in, the Uranium Reserve and wishes to begin mining operations; and

WHEREAS, Virginia Uranium, Inc. has asked the Virginia General Assembly to lift the moratorium on uranium mining; and

WHEREAS, the mining of uranium requires grinding of the ore to small particles, a process known as "milling," which produces vast quantities of waste material known as "tailings;" and

WHEREAS, tailings are typically radioactive and can adversely affect public health if not properly confined; and

WHEREAS, historically, tailings containment structures in the United States have been known to

fail and release radioactive uranium tailings to downstream surface waters; and

WHEREAS, the mining and milling of the Uranium Reserve poses a risk of environmental contamination in the event the containment structures for the tailings fail due to structural defect, substantial flooding or other cause; and

WHEREAS, no uranium mines or tailings containment structures have been constructed in an area, such as southern Virginia, that is subject to frequent tropical storms, hurricanes, nor'easters, and other storm events that have produced precipitation approaching the Probable Maximum Precipitation (PMP), as defined by the National Weather Service; and

WHEREAS, based on a lack of data and experience with areas prone to frequent storm events and also having surface water hydrology conducive to erosion and structural damage, there has been no reasonable assurance that uranium mining can be performed safely in southern Virginia; and

WHEREAS, it is well-documented that long-term exposure to radioactive tailings released from a failing or failed confinement structure would be harmful to human health; and

WHEREAS, the Uranium Reserve is located upstream of the Roanoke River, the Banister River, the John H. Kerr Reservoir ("Kerr Reservoir") and Lake Gaston; and

WHEREAS, the mining and milling of the Uranium Reserve could result in the contamination of downstream drinking water supply sources, including the Roanoke River, Kerr Reservoir and Lake Gaston; and

WHEREAS, the City of Chesapeake owns one-sixth of the Lake Gaston project ("Project") operated by the City of Virginia Beach and is entitled to one-sixth of the drinking water produced by the Project; and

WHEREAS, the Project's raw water intake on Lake Gaston is downstream of the proposed mining and milling of the Uranium Reserve; and

WHEREAS, in light of the potential risk to the Lake Gaston drinking water supply, the Chesapeake City Council adopted a legislative position in 2011 urging the Virginia General Assembly to maintain the moratorium on uranium mining until such time that conclusive evidence demonstrates that uranium mining is safe for the environment and the health of the citizens of Virginia; and

WHEREAS, the City of Virginia Beach, Virginia, commissioned an impact study to determine the risks posed to the Lake Gaston water supply in the event the moratorium is lifted, the uranium mining commences and a storm-based breach of the tailings confinement structure occurs; and

WHEREAS, the Virginia Beach study, entitled, "A Preliminary Assessment of Potential Impacts of Uranium Mining in Virginia on Drinking Water Sources," was released in late January of 2011; and

WHEREAS, the Virginia Beach study indicates that a release of tailings into the Kerr Reservoir and Lake Gaston will require anywhere between two months and two years, depending on the amount of rainfall, to flush dissolved and suspended contaminants from the impacted water bodies; and

WHEREAS, the Uranium Mining Subcommittee of the Virginia Coal and Energy Commission has also initiated a technical study to determine whether tailings pose an unacceptable safety and health risk and have the potential to contaminate drinking water supplies; and

WHEREAS, the Virginia technical study, which has been undertaken by the National Academy of Sciences, is expected to be completed by the end of this calendar year; and

WHEREAS, the Chesapeake City Council requests that the Virginia General Assembly refrain from lifting the moratorium on uranium mining in Virginia until (i) the technical study by the National Academy of Sciences, and any other related studies, are completed and released to the public, (ii) adequate time to review, process and reconcile the results of all studies has been afforded to the scientific community, environmental organizations, civic associations representing the interests of the citizens of Virginia and North Carolina, and state and local legislative governing bodies, boards and commissions; and (iii) the studies are found to have thoroughly evaluated the risks, and concluded with a reasonable degree of scientific

certainty that there will be no significant release of radioactive tailings downstream of the Uranium Reserve and that the public health and safety, as well as the integrity of the environment, can be adequately protected against harm.

NOW, THEREFORE, BE IT RESOLVED by the Council of the City of Chesapeake, Virginia, that the Virginia General Assembly maintain the moratorium on uranium mining in Virginia until (i) the technical study by the National Academy of Sciences, and any other related studies, are completed and released to the public, (ii) adequate time to review, process and reconcile the results of all studies has been afforded to the scientific community, environmental organizations, civic associations representing the interests of the citizens of Virginia and North Carolina, and state and local legislative governing bodies, boards and commissions; and (iii) the studies are found to have thoroughly evaluated the risks, and concluded with a reasonable degree of scientific certainty that there will be no significant release of radioactive tailings downstream of the Uranium Reserve and that the public health and safety, as well as the integrity of the environment, can be adequately protected against harm.

BE IT FURTHER RESOLVED that a copy of this Resolution be sent to the Virginia General Assembly and to the City of Chesapeake Members of the House of Delegates and the Virginia Senate.

[SEAL]

RESOLUTION
SUPPORTING THE CONTINUED BAN
ON URANIUM MINING IN VIRGINIA

Resolution No. _____
May 14, 2013

WHEREAS, a National Academy of Science report of 2011 raises many questions as to the health, safety and welfare of these mining activities impacting citizens of Virginia given our climate issues; and

WHEREAS, research shows that tailings pit liners can last 100 to 200 years. These tailings are reported to remain radioactive for well over 100,000 years, raising the questions as to whether "state-of-the-art" technology can protect our water supplies; and

WHEREAS, during the summer of 2012, the Virginia Department of Health heard 80-90% negative testimony in their series of four public forums on the subject; and

WHEREAS, escrow funds set aside for decommissioning, damage repair from devastating environmental impacts and perpetual care have been chronically inadequate, leaving taxpayers to bear the cost of stabilizing radioactive "Superfund" sites in five western states costing 100's of millions of dollars; and

WHEREAS, allowing the mining and milling of uranium in Virginia would place health and environmental risks on all citizens for the gain of a single industry, and thus far, a single company; and

WHEREAS, local governmental bodies in jurisdictions, home to more than 2.75 million Virginians have passed resolutions in support of Virginia's moratorium on uranium mining, joined by statewide organizations including the Medical Society of Virginia, Virginia Farm Bureau Federation, NAACP and the United Methodist Conference of Virginia; and

WHEREAS, when reasonable people raise reasonable questions and many of these questions go unanswered satisfactorily, serious doubts are logically raised;

NOW, THEREFORE, BE IT RESOLVED when it comes to the health, safety and welfare of Virginia citizens – when in DOUBT – DON'T. The ban on uranium mining and milling in Virginia should become permanent until the industry can unequivocally demonstrate it can be done without threats to our citizens in perpetuity.

BY ORDER OF COUNCIL OF THE
TOWN OF CULPEPER, VIRGINIA

_____

Calvin L. Coleman, Jr., Mayor

ATTEST:

_____

Kimberly D. Allen, Town Clerk

KEEP the BAN
On Uranium Mining in Virginia

Protect Our Health, Our Heritage and Our Future

www.KeepTheBan.org

KEEP THE BAN On Uranium Mining in Virginia

In 1982, Virginia established a ban on uranium mining after geologists discovered deposits of the radioactive metal throughout the state.

Today, foreign-backed interests are trying to lift the ban so they can mine and process uranium in Virginia.

While the focus is on a site called Coles Hill in Pittsylvania County; if the ban is lifted it will be lifted statewide.

There are numerous environmental, human, health and economic repercussions if mining were to occur in Virginia.

Do You Value Bountiful Lands, Healthy Soils and Safe Water for Your Children?

Mining and processing uranium in Virginia has been flagged by the international scientific community as potentially harmful to agriculture, drinking water, property values, tourism and human health.

Concerned? What can YOU do?

Call your House of Delegates and State Senate representatives, send the attached letter or setup a community education event. Education of the risks is critical.

To request presentation materials for your church, club or neighbors, visit www.KeepTheBan.org or call 804-644-0283.

The Problem is . . .

Uranium mining and processing produces waste material known as 'tailings' commonly found to include radium, thorium and various harmful heavy metals linked to severe health effects. The Coles Hill site would generate at least 28 million tons of mine and mill waste.

After studying the issue for over two years, at a cost of $1.4 million, the National Academy of Sciences found there were "steep hurdles" to mining in Virginia.

In the 1980's, uranium leases were purchased on thousands of acres of land in Fauquier, Orange, Culpepper [sic], and Madison counties of Virginia. Those leases are now lapsed, but the potential uranium deposits remain. Localities have since passed resolutions in support of the current Virginia ban, but Virginia needs your support against the foreign interests.

For more information on the environmental effects and various scientific study results, visit our website.

www.KeepTheBan.org

The Keep The Ban Campaign was created by local and state organizations to maintain the existing ban on uranium mining in Virginia. More than 11,000 citizens have stated their support for the ban to the General

Assembly, and over 100 government entitles and non-profit groups in both Virginia and North Carolina have expressed deep concern about lifting Virginia's 30-year ban on uranium mining.

Case Study

A 2012 Virginia Beach engineering study shows that if a major uranium mill tailings waste spill occured at Coles Hill, contaminates would flow from the Bannister River to Kerr Reservoir and Lake Gaston, a source of drinking water for Virginia Beach and its neighbors. This would raise the radiation level in the Kerr Reservoir 10-20 times above the level outlined in the Safe Drinking Water Act. Radioactive contaminants could take two months to two years to flush out of Lake Gaston.

Keep the Ban Steering Committee:

Dan River Basin Association
League of Individuals for the Environment
Piedmont Environmental Council
Piedmont Residents In Defense of the Environment
Roanoke River Basin Association
Sierra Club – Virginia Chapter
Southern Environmental Law Center
Virginia Conservation Network
Virginia Interfaith Power and Light
Virginia League of Conservation Voters

Dear Public Officials,

Virginia has held a ban on uranium mining for nearly 30-years. I strongly encourage you to maintain that ban in order to preserve our drinking water, human health, farmland, property values, wildlife and tourism across Virginia.

I am concerned that radioactive and toxic waste would be left in Virginia soils for centuries near farmlands and local waterways if the ban is lifted and mining ensues. Also, I am aware that exposure to uranium waste has been found to increase the chance of contracting leukemia, kidney disease and other severe health problems.

Continue the good work by maintaining the ban on uranium mining.

Protect Our Health, Our Heritage, and Our Future. Keep The Ban on uranium mining.

Signature _____
Name _____
Email _____
Phone _____
City _____ State _____
Zip _____

Fill out this tear-off petition, add a stamp and mail to the address listed on the reverse side or sign the Keep The Ban petition at www.KeepTheBan.org

Southern Environmental Law Center [LOGO]

Latest News

January 13, 2014
Uranium mining shelved in Virginia – for now

Facing political realities, the company that has been pushing to develop a uranium mine in southern Virginia has put its plans on hold. That should bring a sigh of relief to the 1.1 million people in Virginia and North Carolina whose water supplies would be downstream from the mining operation and its waste, which remains radioactive for thousands of years. After Governor-elect Terry McAuliffe took a bold stance on this issue and pledged to veto any pro-uranium legislation that reached his desk, the parent company of Virginia Uranium, Inc., disclosed that it is suspending its campaign to repeal the state's longstanding ban on uranium mining. Working with a broad coalition of local governments, business leaders, health advocates, and conservation groups, SELC has been a leading defender of the ban and will continue to educate decision-makers about the health and environmental risks of lifting the freeze. We will also continue to highlight a National Academy of Sciences study that confirmed many of our concerns about uranium mining in Virginia, where hurricanes, heavy rains, and other severe weather events can overwhelm waste systems.

Keep the Ban on Uranium Mining in Virginia

In 2007, Virginia Uranium, Inc. went public with plans to exploit a major uranium deposit in Pittsylvania

County, in southern Virginia. The operation would entail extensive mining, a milling facility, and disposal of massive amounts of waste that would leave a toxic and radioactive legacy for centuries.

The deposit at the Coles Hill farm was discovered years ago, but in 1982, the Virginia legislature enacted a statewide ban on uranium mining that still exists today. The industry failed to secure the support it needed to introduce legislation to repeal the ban in the 2012 General Assembly, but it mounted an intensive lobbying effort and introduced legislation in 2013. After a groundswell of opposition from local governments and business, health, and environmental groups, the legislation was pulled due to lack of support.

SELC is at the forefront of a statewide citizen effort, the *Keep the Ban Coalition*, to ensure the ban stays in place.

Uranium Mining: A Dangerous Proposal

Uranium occurs naturally in the ground, but when exposed to air and water, radiation is released into the environment. There is no precedent for large-scale uranium mining in the East, where the population density and a wet climate increase the chance of radiation contaminating streams and groundwater and exposure to humans.

In the last century, the Commonwealth has been hit by at least 78 category-strength hurricanes, including Hurricane Camille in 1969, which dumped 31 inches of

rain on central Virginia. In 2011, at least 37 tornadoes were recorded in Virginia, including one in Halifax County about 20 miles from the Coles Hill site. And in August, 2011, an earthquake of 5.8 magnitude rocked Virginia; its epicenter was just 125 miles from Coles Hill.

Virginia has no regulations for uranium mining, and, with less than 1% of the state's general fund revenues dedicated to environmental programs, is ill-prepared to sufficiently oversee the industry. The federal government has virtually no experience regulating uranium mining in a wet climate.

The only peer-reviewed study of the issue, conducted by the National Academy of Sciences, validates many of our concerns, including risks to water quality from radioactive tailings, and the fact that current federal regulations are inadequate to protect public health and the environment from potential impacts of uranium mining in Virginia. The National Academy's work provides clear, objective evidence that the state's ban on uranium mining should not be lifted.

High Health and Economic Risks

The potential health impacts of exposure to uranium and mining chemicals are well-documented in global studies of people working in and living near mines, and include lung cancer, bone cancer, leukemia, birth defects, weakened immune systems, hormone disruption, and damage to DNA, the kidneys and the liver.

Virginia Beach, which gets its drinking water from Lake Gaston, downstream of the Coles Hill site, released a study concluding that a catastrophic failure of a uranium waste containment structure at the site could contaminate the city's drinking water for as long as two years.

Establishment of a uranium industry in southern Virginia would strangle efforts to diversify the region's economy and threaten existing businesses – including agriculture, tourism, and recreational fisheries. As one study showed, the costs to Virginia in a worst-case disaster are almost double the benefits of the best-case economic scenario.

One of America's Most Endangered Rivers

The potential for mining uranium exists throughout the state; in the early 1980s, the industry leased hundreds of properties in Culpeper, Fauquier, Henry, Madison, Orange, Patrick, and Pittsylvania counties.

But the focus now is on the Coles Hill site Pittsylvania County, located in the heart of the Roanoke River watershed. In May 2011, American Rivers named the Roanoke one of the **10 most endangered rivers** due to the threat of uranium mining.

SELC continues to work with the Keep the Ban Coalition and others to educate Virginia citizens and lawmakers about the dangers of uranium mining and to press the state to keep the ban.

Ad Campaign

SELC and its *Keep the Ban* coalition partners ran ads in the *Danville Register & Bee* and *Chatham Star-Tribune* extolling the environmental and economic assets of Southern Virginia that could be compromised should the current ban on uranium mining in Virginia be lifted. These ads feature the region's strong *tourism*, *recreation*, and *agriculture* that would be threatened by uranium mining. In addition, over *60 governments, businesses, and organizations* have passed resolutions to support continuation of the ban.

Milling 'driving issue' of uranium controversy

BY MARY BETH J ACKSON
mjackson@registerbee.com (434) 791-7981
Posted: Monday, December 10, 2012 7:18 pm

The process of taking solid rock containing uranium ore, crushing it and using chemicals to leech out the useful uranium – which is referred to as "milling" – is one of the more controversial parts of the uranium mining issue facing Pittsylvania County and Virginia.

Cale Jaffe, senior attorney for the Southern Environmental Law Center, and Delegate Don Merricks, R-Pittsylvania County, sided with one another on the uranium milling issue during last week's recent panel discussion in Richmond, saying the "what-ifs" have not been sufficiently addressed.

"It's the milling part of the process that gives me great pause and reservation," Merricks said.

Virginia Uranium Inc. wants to mine and mill a 119-million-pound uranium ore deposit located about six miles from Chatham. Sen. John Watkins, R-Powhatan, has said he will sponsor a bill directing the state to write regulations for uranium mining and milling, which would effectively [sic] the moratorium if signed into law.

Merricks added, "I do not like putting years of containment on citizens of the commonwealth." The leftover waste rock from the milling process – called tailings – would still be radioactive and would have to be monitored for generations.

Jaffe, calling milling "the driving issue," agreed.

"You're dealing with a significant amount of mill tailings waste that retains about 85 percent of its radioactivity," Jaffe said. "Managing that for the long term is what's driving the debate."

Jaffe says "Is it safe or unsafe?" is the wrong question to be asking.

"We see the risks as significantly outweighing the potential benefits," Jaffe said. "We're looking at a particularly high-stakes gamble. It's not a risk Virginia should take."

Locke said the question of lifting the moratorium comes down to weighing risks against benefits.

"If you have best practices and you're vigilant . . . you can mitigate some of the risk. You can never eliminate all of the risk."

He added, "We do the best we can, which can be very, very good."

Regulation will never mitigate all the risks associated with uranium mining and milling, said Paul Locke, chairman of National Academy of Sciences panel on Uranium Mining in Virginia. "You can never have a regulatory framework that eliminates all the risks," Locke said.

Locke expressed caution. He noted that no climate where uranium mining and milling has been done is completely equal to Virginia's own. He stopped short of weighing into the debate.

"I'm really not prepared to do that," he said. "Whatever opinion I have would generate more heat than light."

Patrick Wales, a geologist and spokesman for Virginia Uranium, pointed to mines in Canada and France as examples of places uranium has been mined safely. The company has paid for local officials and legislators to visit those sites, including Watkins.

"Their [opponents'] claims that the public health and environment are at risk is fundamentally wrong," he said.

Wales said the company would do all it could to keep things safe for employees and citizens, because it's their community too.

"One thing that is often overlooked is the employees of Virginia Uranium are residents of Danville and Pittsylvania County," he said. "We bring a deeply moral and personal commitment as well."

Uranium likely to be hot topic

Posted: Wednesday, December 19, 2012 7:00 pm

The possibility of lifting a 30-year ban on uranium mining in Virginia will be a hot topic in the 2013 General Assembly when it convenes Jan. 9, according to local lawmakers.

It will be "a nuclear issue, no pun intended," Del. Danny Marshall, R-Danville, told local business leaders and government officials during the Martinsville-Henry County Chamber of Commerce's annual Pre-legislative Breakfast on Tuesday at the Virginia Museum of Natural History.

Uranium is a radioactive element used to make nuclear power and weapons. The ban was enacted in 1983 after scientists voiced concerns that uranium mining could harm the environment and public health.

Virginia Uranium Inc. wants the ban repealed so it can mine and mill uranium at a location near Chatham thought to be one of the world's largest deposits of the metal. The company maintains the mine would create hundreds of jobs and its operations would be safe.

Three of the four lawmakers who spoke during the breakfast oppose uranium mining.

By focusing on job creation, the company was "very smart in its approach" to try and convince people to favor repealing the ban, Marshall said.

Yet based on his understanding of mining processes, Marshall said for every 2,000 pounds of materials mined, only a pound would be actual uranium.

The rest would be "tailings" left behind with radioactivity that could take thousands of years to dissipate, he said.

Heavy rains and high winds could spread those radioactive materials over long distances, perhaps to other states, according to Marshall.

Del. Don Merricks, R-Pittsylvania County, said uranium is found throughout Virginia but studies have shown that the site the company wants to mine is the only potentially viable uranium mining location in the state.

"I could live with the mine" itself, Merricks said. "The problem is the stuff that's left" after mining occurs, essentially "forever."

"I don't think we're ready for uranium mining," added state Sen. Bill Stanley, R-Glade Hill. "The risk is too great."

Del. Charles Poindexter, who also is a Glade Hill Republican, did not discuss his opinions on uranium mining during the breakfast.

Poindexter previously has indicated he was waiting for a report on what a regulatory framework should look like before he forms any opinions.

Among other topics discussed at the breakfast were transportation and the potential of federal sequestration – although only state lawmakers attended the event.

Sequestration refers to roughly $1.2 trillion in across-the-board spending cuts that will occur Jan. 1 if Congress and President Barack Obama cannot reach agreements on budget issues.

Federal lawmakers have "some hard decisions" to make, Merricks said. He added that Republicans and Democrats have to work together to make the decisions because lawmakers from one party cannot do it alone.

The federal government must generate new revenues as well as reduce spending, he said. "It's going to hurt to cut the budget, but it's got to be done," he added.

Any cuts to defense spending could greatly impact Virginia because the state has a lot of defense-related industries, lawmakers noted.

Poindexter said he wants to see the four-lane expansion of U.S. 58 finished and the construction of Interstate 73 begin.

Other lawmakers indicated they feel the same way.

But if people want highway improvements, "somebody's got to pay for" them, Merricks said.

Ideas along that line include charging tolls along some highways and raising taxes on vehicle fuels, Poindexter said.

He said, though, that many lawmakers from rural areas are opposed to higher fuel taxes because right now, 42 cents of every $1 collected from gasoline taxes goes to help fund rail systems in Northern Virginia.

The Connection

Column: Uranium Mining in Virginia

By Kenneth R. "Ken" Plum/State Delegate (D-36)
Wednesday, July 11, 2012

Virginia has one of the largest deposits of uranium of anyplace in the country in Pittsylvania County in the southern part of the state. The location of Coles Hill Farm where the deposit is centered is in the Roanoke River watershed. There are smaller deposits of uranium in other parts of the state including the Piedmont region.

Because of the risks to public health, Virginia enacted a ban on uranium mining in the state in 1982 that is still in place today. With increased prices for the sale of uranium there has been renewed interest in mining the uranium that is in Virginia. In 2007, Virginia Uranium, Inc. announced plans to seek to lift the ban in Virginia in order that uranium could be mined in the state. A study was undertaken by the National Academy of Sciences to determine the safety of lifting the ban.

There is no precedent for large-scale uranium mining in the eastern part of the United States where population density and a wet climate increase the chance of radiation contaminating streams and groundwater and exposure to humans, as the Southern Environmental Law Center pointed out. They go on to state that in the last century Virginia has been hit by at least 78 category-strength hurricanes, and in 2011 there were 37 tornadoes in the state including one

within 20 miles of the proposed mining site. The earthquake in Virginia in August, 2011, of 5.18 whose effects were felt all the way to New York had its epicenter just 125 miles from the proposed site.

In addition to the National Academy study, the City of Virginia Beach which gets its drinking water from Lake Gaston downstream of the Coles Hill site funded a study finding that a catastrophic failure of a uranium waste containment structure at the site could contaminate the city's drinking water for as long as two years.

Although legislation to lift the ban has been talked about, the serious concerns about the health risks and the strong community opposition have kept any bills from being debated. Despite the fact that the legislature has not acted, Governor Bob McDonnell appointed a task force to write regulations that would need to be met if the ban was lifted. That group is now at work and has been strongly criticized for the lack of transparency in its work. There is a great likelihood that the regulations that are developed will be used as a justification for lifting the ban. There are well-funded industry lobbyists at work actively looking for ways to get around the ban. Environmental groups are also actively working to keep the ban in place.

The threat to human health outweighs any arguments for lifting the ban. I remain opposed to lifting the ban and will be sensitive to any efforts to circumvent the ban through the regulatory process.

Loudoun Democrats [LOGO]
LOUDOUN COUNTY DEMOCRATIC COMMITTEE

Herring Opposes Lifting Ban on Uranium Mining

Democratic candidate for Attorney General State Senator Mark Herring (Loudoun & Fairfax) released the following statement today announcing his opposition to legislation that would lift the ban on uranium mining and milling in Virginia:

"Over the past year, I've had the opportunity to meet with interested stakeholders on both sides of the debate over whether to end the ban on uranium mining and milling in Virginia. I have carefully considered their positions, as well as the scientific evidence, and I have concluded that ending the ban on uranium mining and milling is not the right course for our Commonwealth.

Therefore, I will oppose legislation during the upcoming 2013 General Assembly session that would lift the ban. Additionally, I plan to introduce budget language that would prohibit any state funding from being used to promulgate regulations designed to circumvent the ban.

The Governor should not be using taxpayer dollars and staff resources to create the regulatory framework for uranium mining, which is currently prohibited by state law.

The health and safety of the public, and of the environment, should be of paramount concern when considering issues such as this and I am simply not convinced

that uranium mining can be conducted in Southside Virginia in a safe and environmentally responsible way. I take very seriously the concerns raised by citizens, business leaders and local officials in both Southside and Hampton Roads who have expressed to me their fears with regard to the potential for negative public health impacts, particularly water supply contamination.

I look forward to working with those same citizens, business leaders and local officials on ways we can improve and expand economic opportunity in Southside and diversify Virginia's portfolio of domestic energy resources."

Jeff E. Schapiro: McAuliffe looks to bury uranium issue

Jeff E. Schapiro

jschapiro@timesdispatch.com | Posted: Wednesday, November 13, 2013 12:00 am

Terry McAuliffe is issuing his first veto—and he hasn't been sworn in as governor yet.

In Norfolk on Monday, the Democrat declared he would reject legislation lifting Virginia's three-decade ban on uranium mining. McAuliffe said he wouldn't even allow the state to write safety regulations; specifically, for a proposed mine in Pittsylvania County, hundreds of miles upstream from Hampton Roads, which draws its water, via pipeline, from a lake near the mine site.

Given that McAuliffe has always been a skeptic on uranium mining, it should not come as a surprise that he is willing to use the full weight of the governorship to block it. What may come as a surprise is that, after running from his dealmaking past, he now seems willing to be seen as a dealmaker.

The environmental interests that supplied McAuliffe, directly and indirectly, with at least $10 million in cash and services expect something for their money and trouble. So do Virginia Beach Mayor Will Sessoms and other anti-uranium Republicans in Hampton Roads who broke with their party to support McAuliffe over GOP nominee Ken Cuccinelli, a mining proponent.

And then there are the voters: The cities of Norfolk, Portsmouth, Chesapeake and Suffolk—all on record demanding the legislature preserve the prohibition on uranium mining—fell to McAuliffe in the election last week. He barely lost Virginia Beach, the state's largest city and the loudest voice in the anti-uranium choir.

"I don't support uranium mining," McAuliffe told The Virginian-Pilot of Norfolk after a Veterans Day ceremony. "First and foremost as governor, my job is to make sure that our communities and our citizenry are safe. I'm not comfortable with the science to the point that I can say that with uranium mining, we would be safe. I'm afraid it would get into the drinking water."

And so, the latest phase in the contentious, continuing debate over uranium mining may end before it begins, perhaps snuffing out the issue for the next four years—possibly longer, depending on the arc of the economy. Even if the industry cobbles the votes to get a bill to McAuliffe, it is unlikely it could summon the required two-thirds of the House and Senate to override a veto.

It's no accident McAuliffe said what he said when he said it and where he said it.

McAuliffe's victory is still fresh in people's minds. It would not have been possible without a near-sweep of Hampton Roads cities. That relied, in part, on the backing of elective officials. Among them: Sessoms and another mining opponent, Norfolk Mayor Paul Fraim.

As a candidate, McAuliffe had to hedge on uranium, if only a bit. Perceived flexibility on a sensitive issue can provide entree to a broad array of voters.

As McAuliffe told FairfaxTimes.com in October, " believe that right now the environmental risks of uranium mining are much too high. . . . Generally I know that, when properly crafted, we can advance policies that protect our environment, grow our economy and keep electric rates low for Virginia."

As a governor-elect, McAuliffe doesn't have to equivocate. A firm stance on a sensitive issue is a way of reassuring his voter base.

That's why McAuliffe told The Pilot that he would not allow the state to even develop regulations: " would we be wasting our time and resources drafting regulations if we're not going to lift the moratorium?"

McAuliffe's pronouncement could discourage the industry from renewing in January its push for the General Assembly to authorize regulations or lift the 1982 moratorium. But if the industry, fortified with $25 million from Canadian mining interests, isn't pushing, does it run the risk of discouraging its investors? Like McAuliffe's deep-pocketed backers, they expect something for their money and trouble.

McAuliffe's hardened stance may have a more immediate effect.

This afternoon in Norfolk, the Hampton Roads Chamber of Commerce is scheduled to hear presentations on uranium mining, pro and con. The business

organization may finally take a position on a matter on which it has preferred studied silence. The chamber's non-position, its unstated neutrality, had been a boon for pro-uranium forces. It meant they had one less battle to fight—and in a region with many people and even more economic power.

That economic clout is largely dependent on tourism and the military, both of which would be imperiled, uranium foes contend, if the Hampton Roads water supply were tainted by radioactive runoff, à la Fukushima. The industry says technological advances greatly minimize risks to the public. It's a point made in writing: A billboard erected last month by Virginia Uranium Inc. on U.S. 29 welcomes visitors to Pittsylvania County—"future home of the safest uranium mine in the world."

At the height of the gubernatorial campaign, another quieter campaign was unfolding. Lobbyists and experts for both sides in the uranium fight fanned across rural Southside and urban Hampton Roads, making their case—largely in anticipation of a potentially decisive vote by the Hampton Roads chamber.

But the group has been upstaged by McAuliffe and his veto threat. The guy who ran from his showman past suddenly—and on cue—reverted to form.

October 13, 1978

CONGRESSIONAL RECORD—SENATE

[36687] H.R. 13650—AN ACT TO AUTHORIZE THE SECRETARY OF ENERGY TO ENTER INTO COOPERATIVE AGREEMENTS WITH CERTAIN STATES

* * *

[36694] • Mr. HANSEN. Mr. President, I rise in strong support of the Residual Radioactive Materials Act of 1978. S. 3078. The Energy and Natural Resources Committee is proposing an amendment in the nature of a substitute to the committee-reported version of S. 3078. The committee amendment is a modification of the House-passed companion legislation, H.R. 13650, the Uranium Mill Tailings Radiation Control Act of 1978. The modifications to H.R. 13650 contained in the committee amendment reflect many of the policy decisions adopted in the Energy Committee's consideration of this legislation.

Very briefly, Mr. President, this legislation is the outgrowth of congressional concern originally manifested in Public Law 92-314, which authorized the old Atomic Energy Commission to conduct remedial action cleanup operations in Grand Junction, Colo. At the time of our consideration of that legislation in the 92d Congress, the Federal Government became convinced that the use of uranium mill tailings in the construction of many buildings and facilities in Grand Junction, Colo., after the mill tailings had accumulated

from our Nation's nuclear weapons program, constituted a serious health hazard to the inhabitants of that Colorado town. Consequently, the Atomic Energy Commission was directed in 1974 to review other possible sites where similar mill tailings accumulations might also constitute a threat to public health and safety. Over the past 3 years, the Commission and its successors, first, the Energy Research and Development Administration, and then, the Department of Energy, have reviewed systematically all of the known, significant accumulations of uranium mill tailings resulting from the nuclear weapons program. This same concern also has been the subject of several very detailed reports by the General Accounting Office and by the various State and university organizations in the affected States.

All of the aforementioned activity resulted in the administration's conclusion at the beginning of this year that these mill tailings sites did constitute a [36695] serious public health and safety hazard which should be the subject of Federal remedial action as soon as possible. The hearings before the Energy and Natural Resources Committee, as well as the two House committees of jurisdiction, the Interior and Insular Affairs Committee and the Interstate and Foreign Commerce Committee, verified the accuracy of the studies that had been done and the conclusions which have been drawn by the administration and others who have evaluated this problem. On that basis, the administration submitted S. 3078 which was introduced by Senator JACKSON by request. Similar

legislation had been introduced by Senator GARN and a number of bipartisan cosponsors, including Senators HATCH, DECONCINZ, MCCLURE, DOMENICI, LAXALT, HANSEN, WALLOP, and SCHMITT, in S. 3008, and later by Senator HART and a number of bipartisan cosponsors, including Senators DOMENICI, GARN, HATCH, and LAXALT, in S. 3253. All of these bills reflect the basic judgment that the mill tailings located at sites now inactive do constitute a serious threat to public health and safety that should be the subject of remedial action to stabilize the mill tailings in order to protect public health and safety and the environment. These various bills addressing this fundamental concern adopted somewhat different schemes for achieving that consensus result, but basically all of the introduced bills proposed action now to initiate the required remedial action.

* * *

ATOMIC ENERGY ACT OF 1946

HEARINGS

BEFORE THE

SPECIAL COMMITTEE ON ATOMIC ENERGY

UNITED STATES SENATE

SEVENTY-NINTH CONGRESS

SECOND SESSION

ON

S. 1717

A BILL FOR THE DEVELOPMENT AND CONTROL OF ATOMIC ENERGY

PART 3

FEBRUARY 7, 8, 11, 13, AND 14, 1946

Printed for the use of the Special Committee on Atomic Energy

[LOGO]

UNITED STATES

GOVERNMENT PRINTING OFFICE

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* * *

[318] Mr. KETT. In regard to product disposal, namely uranium, it must be emphasized that the

Government should have full control of such uranium products and that the processes used make such complete control a very simple matter.

Generally speaking, individual vanadium deposits are small; new deposits must be constantly developed and brought into production or the whole vanadium-mining industry in the United States of American will eventually—and not very far in the future—have to stop for lack of ore. Therefore, restrictions on vanadium production will automatically restrict efficient uranium recovery, if not make such recovery impossible. Whether the uranium is currently recovered in the vanadium process or allowed to go through the process into the impounded tailings for future recovery, the whole vanadium mining industry and the western plant facilities must be kept entirely healthy and in their highest state of efficiency as long as uranium in any quantity may be required at short notice.

We think that the right of location and patent—that is the patented ground, the mining property—should be expressly stated, at least where such location is made primarily and in good faith for elements other than radioactive ores.

We think that the right of condemnation and seizure should not be extended to mining properties, or to plants which are capable of producing radioactive elements but whose main operation is the production [319] of elements that are not radioactive, and which plants could operate without production or appreciable loss, actual or potential, of radioactive elements.

We think that S. 1717 should offer such facilities and protection to the vanadium producer as to stimulate to the utmost in the United States of America the search for and development of new sources of vanadium and its associate element, uranium.

The CHAIRMAN. Before you go into your summary, Mr. Kett, what specifically do you suggest should be incorporated in S. 1717 to accomplish that objective?

Mr. KETT. Taking the bill itself, on page 9, line 2, I will read that sentence, incorporating our suggestions:

The term "source materials" shall include any ore *after but not before mining, extraction, and removal from its Place of origin* containing uranium, thorium, or beryllium * * * . [italics indicate suggested insertion.)

That would cure the whole business. That would simply mean that anything still in the ground is not to be controlled. In other words, no Government department can take out 3,000,000 acres from circulation and say, "You cannot locate claims here, or patent claims, or have anything to do with it."

Senator HICKENLOOPER. You would still retain the independent prospecting rights and location?

Mr. KETT. I mean that the mining law should not be changed at all. Anybody should be allowed to stake out a claim, work it, and patent the claim, after which they own it in fee simple, with no restrictions on the prospecting, location, and development of claims

containing vanadium and uranium, which it always contains out there.

Senator HICKENLOOPER. Just watch them after they get the ore out of the ground?

Mr. KETT. The minute the stuff is mined, OK—all the control you want on it; but don't stop free prospecting for the materials.

The CHAIRMAN. That would seem to me to be rather sensible. After all, what we are interested in is the uranium with no disposition, at least on my part, to try to control vanadium or any other useful metal that doesn't have fissionable possibilities.

Mr. BRANSOME. Mr. Chairman, I might add this: You have a few hundred small producers out there that are constantly prospecting for ore, producing it and selling it to the people that treat the ore. You certainly don't want to restrict those fellows.

In this bill at one point it goes beyond source materials and says:

the Commission shall arrange for the exclusive operation of facilities employed in the manufacture of fissionable materials by employees of the Commission.

This in itself is so restrictive that it seems to me you have pulled a curtain down on all the progress of the development of fissionable materials except by a few people in the Government, who may or may not have the urge to go ahead in accordance with the

dictates of their own desires to improve scientific knowledge.

The CHAIRMAN. I think that ought to be changed. Of course the intent is the package product, and not of course the ores in the ground.

Mr. BRANSOME. But it is poorly worded in there, Mr. Chairman, if I may presume.

The CHAIRMAN. Will you cite the page?

[320] Mr. BRANSOME. It is page 7, line 10. That is beyond our source material job, but if that ever starts it will go back to source material, in my opinion.

The CHAIRMAN. You suggest the use of the word "manufacture" rather than "mining."

Mr. BRANSOME. That is right. As I say, I am going beyond the source materials into fissionable materials, but these words "by employees of the Commission," in my opinion, are impracticable.

The CHAIRMAN. Of course, everybody should be permitted to mine the material.

Mr. BRANSOME. Well, you mine the material, but suppose you are treating fissionable materials themselves. Suppose you take a huge company with a large research department. Any industry that goes in must be employed by the Commission. If my understanding of this is correct, employ means employ, and that means you must be hired and paid and controlled both as to discipline and duties by the Commission, which is impractical.

The CHAIRMAN. Well, I want to make sure that we understand one another. It is the intent of the bill, as you heard Mr. Folk and the committee discuss it, to make the manufacture of fissionable materials a Government monopoly in the field. It is not the intent of the bill to make a Government monopoly of the mining of the source materials.

Mr. BRANSOME. My only purpose in pointing out this particular wording, "employees of the Commission," is to indicate that it would require considerable exploration. Let me say this: I don't want to confuse you, but at any time we might go on, as a corporation—or other companies in our industry—into the fissionable material job, or go beyond just the source materials. We have research departments that are constantly doing that, so our interest is there.

The CHAIRMAN. Of course, that opens up a much wider field. As I said, I agree with you that the mining of the materials should not be a Government monopoly.

* * *

83D CONGRESS } HOUSE OF { REPORT
2d Session } REPRESENTATIVES { No. 2181

AMENDING THE ATOMIC ENERGY ACT OF 1946, AS AMENDED, AND FOR OTHER PURPOSES

JULY 12, 1954.—Committed to the Committee of the Whole House on the State of the Union and ordered to be printed

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Mr. COLE of New York, from the Joint Committee on Atomic Energy, submitted the following

REPORT

[To accompany H. R. 9757]

The Joint Committee on Atomic Energy, to whom was referred the bill (H. R. 9757) to amend the Atomic Energy Act of 1946, as amended, and for other purposes, having considered the same, unanimously report favorably thereon and recommend that the bill do pass. Some individual members of the Joint Committee hold divergent views on certain sections of the bill which are attached hereto or will be presented appropriately in their respective Houses.

This report describes the background of H. R. 9757, which is the committee-approved revision of H. R. 8862 on which public and executive hearings have been held, sets forth the basic considerations which impelled the Joint Committee to report it

favorably, and furnishes a section-by-section analysis of the bill.

CHANGING PERSPECTIVES IN ATOMIC ENERGY

The primary purpose of H. R. 9757 is to bring the Atomic Energy Act of 1946 into accord with atomic progress and to make our Nation's legislative controls better conform with the scientific, technical, economic, and political facts of atomic energy as they exist today—almost a decade after S. 1717 became the law of the land (Public Law 555, 79th Cong.).

The organic law was written at the very outset of the atomic era. Those who participated in drafting that law were keenly aware that many unknown factors were involved in measuring the future impact of this new source of energy upon our national life. Indeed, the law warned in its findings and declaration that "any legislation will necessarily be subject to revision from time to time." We deem it a tribute to the special committee which drafted S. 1717, 79th Congress, and to the late Senator Brien McMahon, sponsor of the legislation and subsequently chairman of the Joint Committee, that the organic law has served our Nation so well for nearly a full decade. We would also record our satisfaction with the fact that, at a time when atomic energy was popularly associated only with the atom bomb, the organic law specifically called attention to constructive uses of the atom, by declaring that—

subject at all times to the paramount objective of assuring the common defense and security, the

development and utilization of atomic energy shall, so far as practicable, be directed toward improving the public welfare, increasing the standard of living, strengthening free competition in private enterprise, and promoting world peace,

Under the Atomic Energy Act of 1946, our Nation has developed, in the form of our atomic-weapon stockpile, a degree of deterring power which may well constitute the free world's greatest material asset in its effort to avert another worldwide war. The elementary requirements of national security have compelled us to give military uses of the atom top priority. Yet we have simultaneously developed, to a considerable degree, beneficent applications of this new force.

The past 8 years have witnessed extraordinary scientific and technical achievements in atomic energy, both on the peacetime and military sides. Technological developments—some promising longer and richer lives for all privileged to share in the peacetime benefits of the atom, and others posing grave threats to the very existence of civilization—have proceeded much more rapidly than was expected in 1946. As a result, atomic-energy legislation which was once fully responsive to assuring the common defense and promoting the national welfare must now be revised to take account of existing realities in atomic energy, in our Nation and throughout the world.

When the original act was written, the United States possessed a monopoly of atomic weapons. In a world where just and lasting peace was fervently

sought though riot yet assured, simple prudence dictated stringent security regulations aimed at prolonging our monopoly. It was widely believed that the Soviet Union might not explode its first atomic bomb for many years to come, and that still more years might pass before it could produce atomic weapons in quantity. In point of fact, however, the Soviet Union broke our atomic monopoly less than 3 years after the Atomic Energy Act of 1946 was put on the statute books. In the fall of 1953, less than a year after our first full-scale fusion-weapon test, the Soviets also achieved a thermonuclear explosion. This clearly does not mean that the security regulations contained in the Atomic Energy Act of 1946 served no useful purpose, or that an indiscriminate relaxation of these safeguards is now in order. It does mean that our provisions for the control of information must now be 'revised to protect our national interest in a world where the forces of evil have added to their conventional arms a growing ability to launch a devastating atomic blow against the free world.

When the organic law was enacted, atomic bombs were regarded by most as strategic weapons. Tactical applications of the military atom were but dimly perceived. Still less was it recognized that the time would soon come when tactical atomic weapons could profoundly, perhaps even decisively, affect the operations of the ground forces defending Western Europe. With our Nation the sole possessor of atomic weapons, and with these weapons husbanded for a strategic counterblow against an aggressor, there was no need for

acquainting friendly nations with information concerning the effects and military employment of tactical atomic weapons. Today, however, we are engaged with our allies' in a common endeavor, involving common planning and combined forces to dam the tide of Red military power and prevent it from engulfing free Europe. America's preponderance in atomic weapons can offset the numerical superiority of the Communist forces, and serve emphatic notice on the Soviet dictators that any attempt to occupy free Europe, or to push further anywhere into the free world, would be foredoomed to failure. Yet, so long as our law prohibits us from giving our partners in these joint efforts for common defense such atomic information as is required for realistic military planning, our own national security suffers.

To contrast still further differences between the perspective of 1946 and that of 1954: It was commonly believed 8 years ago that the generation of useful power from atomic energy was a distant goal, a very distant goal. Atomic energy then was 95 percent for military purposes, with possibly 5 percent for peacetime uses. The resources of the Atomic Energy Commission and of its contractors appeared fully adequate to develop atomic-power reactors at a rate consistent with foreseeable technical progress. Moreover, there was little experience concerning the health hazards involved in operating atomic plants, and this fact was in itself a compelling argument for making the manufacture and use of atomic materials a Government monopoly.

Today, however, we can draw on the experience acquired in designing, building, and operating more than a score of atomic reactors. It is now evident that greater private participation in power development need not bring with it attendant hazards to the health and safety of the American people. Moreover, the atomic-reactor art has already reached the point where atomic power at prices competitive with electricity derived from conventional fuels is on the horizon, though not within our immediate reach. For more than 2 1/2 years, the experimental breeder reactor has actually been producing relatively small amounts of electricity at the national reactor testing station in Idaho. The land-based prototype of the atomic engine propelling the U. S. S. *Nautilus* has already produced more than enough power to send an atomic submarine around the world, fully submerged and at full speed. The Westinghouse Electric Corp. and the Duquesne Power & Light Co. are now constructing the Nation's first large-scale atomic-power reactor, which will generate 60,000 kilowatts of electricity—an amount sufficient to furnish light and power for a sizable city.

Many technological problems remain to be solved before widespread atomic power, at competitive prices, is a reality. It is clear to us that continued Government research and development, using Government funds, will be indispensable to a speedy and resolute attack on these problems. It is equally clear to us, however, that the goal of atomic power at competitive prices will be reached more quickly if private enterprise, using private funds, is now encouraged to play a far larger

role in the development of atomic power than is permitted under existing legislation. In particular, we do not believe that any developmental program carried out solely under governmental auspices, no matter how efficient it may be, can substitute for the cost-cutting and other incentives of free and competitive enterprise.

Today we are not alone in the drive to achieve peacetime atomic power. Eight years ago, besides the United States, only the United Kingdom, Canada, and—as we have recently come to find—the Soviet Union, had major atomic energy projects in being. The possibility of cooperating with other nations to gain mutual advantage in the area of peacetime power appeared far in the future. As against this, however, more than 20 countries now have vigorous atomic energy programs, and several of them are pressing toward the construction of atomic power plants to turn out useful amounts of electricity.

In 1946, finally, our Nation earnestly hoped that worldwide agreement on international control of atomic energy might soon be secured. It was reasonable, therefore, that the original act should prohibit an exchange of information on commercial uses of atomic energy with other nations until such time as the Congress declared that effective and enforcible international safeguards against the use of atomic energy for destructive purposes had been established.

But our hopes of 1946 have been thwarted by unremitting Soviet opposition to the United Nations plan

for the control of atomic energy. Although we would be morally derelict if we abandoned our hopes for the eventual effective international regulation of all armaments, legislative policy cannot now be founded on the expectation that the prospect of such control is either likely or imminent.

In summary: Statutory provisions which were in harmony with the state of atomic development in 1946 are no longer consistent with the realities of atomic energy in 1954. Legislation not responsive to the needs and problems of today can serve only to deny our Nation, and like-minded nations as well, the true promise of atomic energy—both in augmenting the total military strength of the free world, and in increasing opportunities for beneficent uses of the atom.

* * *

IN THE UNITED STATES DISTRICT COURT
WESTERN DISTRICT OF VIRGINIA
DANVILLE DIVISION

VIRGINIA URANIUM, INC., *et al.*, Plaintiffs,	)	
v.	)	CIVIL ACTION NO. 4:15CV-31-JLK
TERRY McAULIFFE, *et al.*, Defendants.	)	

REPLY IN SUPPORT OF MOTION TO DISMISS AND RESPONSE TO CROSS-MOTION FOR SUMMARY JUDGMENT

* * *

E. Virginia may consider public health and safety in regulating uranium mining.

Since uranium mining lies beyond the jurisdiction of the NRC, it must be presumed that Congress intended the states to retain the ability to exercise the full scope of their traditional police powers in regulating uranium mining. Otherwise, the states would face a regulatory vacuum in which there would be no health and safety protection for their citizens. *See PG&E*, 461 U.S. at 207-08 ("[I]t is almost inconceivable that Congress would have left a regulatory vacuum; the only reasonable inference is that Congress intended the States to continue to make these judgments."). The Court need not conduct a searching review of

legislative motive;[7] regardless of what Virginia may have considered in either passing or declining to overturn[8] the current ban, the AEA does not reach uranium mining and the Commonwealth was entitled to exercise the entirety of its police powers[9] in making such a

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[7] The Defendants maintain that "it would be particularly pointless . . . to engage in such an inquiry here where it is clear that the States have been allowed to retain authority" over the subject of conventional uranium mining. *PG&E*, 461 U.S. at 216. Moreover, it is difficult to see how newspaper articles published thirty years after the enactment of Va. Code § 45.1-283 bear on the legal question of whether Congress somehow prevented the Commonwealth from doing so under the AEA. However, should the Court determine such an inquiry is appropriate, the Court should, pursuant to Fed. R. Civ. P. 56(d) and following the answers of the remaining Defendants, establish a period of discovery for the parties to assemble evidence on this issue.

[8] The Plaintiffs' reliance upon cases such as *Shelby Cnty v. Holder*, ___U.S. ___, 133 S. Ct. 2612 (2013) is misplaced. *Shelby County* does not render inquiry into recent legislative activities appropriate in this case. It involved remedial activities under the Voting Rights Act and whether or not conditions still existed warranting such remedial activities. *See id.* at 2618. The Plaintiffs' challenge to Va. Code § 45.1-283 does not hinge upon the current conditions of the uranium industry; rather, it is a *prima facie* legal challenge to the authority of Virginia to enact such a statute in the first place. The enactment did not become unconstitutional because of subsequent changes in the uranium industry; it was, in the Plaintiffs' construct, constitutionally defective at the moment of enactment. Therefore, the "unsatisfactory venture" of inquiring into legislative motive (if at all appropriate) must focus on the original passage of the statute, not any subsequent developments. *PG&E*, 461 U.S. at 216.

[9] As noted in the Defendants' original Motion, much of the evidence highlighted by the Plaintiffs speaks not to radiation or radiological issues, but general concerns about health, safety and welfare. *See, e.g., Plaintiffs' Motion* at 35 (Page ID#366) (noting that Va. Code § 45.1-283 was passed based upon the General

determination. *See Met. Life Ins. Co. v. Massachusetts*, 471 U.S. 724, 756 (1985) (noting states "have had great latitude under their police powers to legislate as to the protection of the lives, limbs, health, comfort, and quiet of all persons."). There is simply no "clear and manifest" direction to the contrary provided by the AEA. *PG&E*, 461 U.S. at 206 (citation omitted).

* * *

Assembly's "concern for 'the health, safety, and general welfare of the citizens of this Commonwealth.'") (quoting Senate Bill 179); *id.* at 17-18 (Page ID# 348-49) (quoting then-Senator Herring's concerns about the potential "public health impacts" of uranium mining); . These types of concerns lie at the heart of a state's police powers, highlighting the fact that any effort to supersede those by Congress must be done with "clear and manifest" intent. *PG&E*, 461 U.S. at 206 (citation omitted).

No. 16-1005

IN THE UNITED STATES COURT OF APPEALS
FOR THE FOURTH CIRCUIT

VIRGINIA URANIUM, INC.; COLES HILL, LLC; BOWEN MINERALS, LLC; VIRGINIA ENERGY RESOURCES, INC.,

Plaintiffs-Appellants,

v.

JOHN WARREN, in his official capacity as Director of the Virginia Department of Mines, Minerals and Energy, *et al.*,

Defendants-Appellees.

On Appeal from the United States District Court for the Western District of Virginia, the Hon. Jackson L. Kiser, presiding (4:15-cv-00031)

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April 18, 2016

* * *

[14] **F. Defendants move to dismiss under Rule 12(b)(6) and Appellants cross-move for summary judgment.**

Unsuccessful in their lobbying efforts, Appellants filed this lawsuit. They seek a declaratory judgment that the Atomic Energy Act preempts Virginia Code § 45.1-283, and an injunction compelling Virginia's permitting authorities "to ignore" the moratorium.[54]

Defendants moved to dismiss the complaint under Rule 12(b)(6), arguing that, as a matter of law, the 1954 Act does not address, let alone preempt,

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[54] JA 14.

conventional uranium mining on nonfederal lands.[55] In their response, Appellants included a cross-motion for summary judgment, attaching more than 700 pages of newspaper stories and other materials in an effort to show that Virginia enacted the uranium-mining moratorium and failed to repeal it, predominantly because of [15] radiological safety concerns.[56] Some of those materials showed concerns about uranium mining that were independent of concerns about radiation or about milling or tailings management.[57] All of those materials were beside the point, however, because Rule 12(b)(6) required defendants to accept as true that Virginia enacted the moratorium based on radiological safety concerns.[58]

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[55] Certain defendants, including the Governor of Virginia, also moved for dismissal under Rule 12(b)(1) on Eleventh Amendment grounds. The district court granted that motion (JA 900-02) and Appellants do not contest that ruling here.

[56] JA 143-866.

[57] *See, e.g.*, JA 70-71 (citing "safety of miners"); JA 654 (citing aesthetic, tourism, and economic concerns, and volatility of uranium market leading to business failure); JA 659 (citing "concerns that water sources could be threatened by mining or natural events"); JA 670 (citing concern about the "potential for taxpayers to get stuck with the bill if something goes wrong at the mine or the mining company goes out of business").

[58] Defendants did not (and do not) concede the truth of the hearsay in those newspaper articles and other materials. *See* Reply in Supp. of Mot. to Dismiss & Response to Cross-Mot. for Summ. J. at 2 (ECF No. 56) (noting plaintiffs' effort to show the moratorium's "purported purposes"). Unlike in the Eastern District of Virginia, no rule in the Western District required defendants to respond to every alleged statement of undisputed material fact in plaintiffs' brief. *Compare* E.D. Va. Local R. 56(B) *with* W.D.

One item Appellants included in the record below bears particular mention. Paragraphs 77-78 of the Complaint described a 2011 report by the National Academies of Sciences that was commissioned by the Uranium Subcommittee of [16] the Virginia Coal and Energy Commission.[59]Appellants selected more than 140 pages of that report to file in the district court.[60] But they omitted the pages explaining that "[t]here is no federal law that specifically applies to uranium mining on non-federally owned lands; state laws and regulations have jurisdiction over these mining activities."[61]

* * *

Va. Local R. 56(b). Defendants conceded the truth of plaintiffs' claims about legislative motive only for purposes of their Rule 12(b)(6) motion. Had defendants' motion to dismiss not been granted, the district judge would have had discretion to give defendants "an opportunity to properly . . . address the facts" asserted by plaintiffs. Fed. R. Civ. P. 56(e)(1).

[59] JA 36-37 (Compl. ¶¶ 76-78).

[60] Pls.' Ex. 3 (JA 203-349).

[61] *See* National Research Council, *Uranium Mining in Virginia: Scientific, Technical, Environmental, Human Health and Safety, and Regulatory Aspects of Uranium Mining and Processing in Virginia* 7 (2012), http://www.nap.edu/catalog/13266/uranium-mining-in-virginia-scientific-technical-environmental-human-health-and-safety-and-regulatory-aspects-of-uranium-mining-and-processing-in-virginia; *id.* at 233, 256 (same).